

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.05.96
Test oil : ISO 4113

Combination No. : 0 402 648 920

Injection pump
Pump designation : PE8P120A32OLS7844
EP type number : 0 412 628 860

Governor
Governor design. : RQV350...1050PA870
 : -16
Governor no. : 0 421 813 953

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

A01

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 14.30
Tolerance mm : ± 0.10

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 257.5

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.55
Tolerance mm : \pm 0.25

Rated speed rpm : 1108
guide sleeve
travel mm : 8.05
Tolerance mm : \pm 0.25

Rated speed rpm : 570
guide sleeve
travel mm : 3.55
Tolerance mm : \pm 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 5.65
Tolerance mm : \pm 0.25

A02

Rated speed rpm : 1204
guide sleeve
travel mm : 10.05
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1125

Rack travel in mm : 17.25
Tolerance mm : \pm 0.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 257.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 6.60
Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.30
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 15.30
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : 290
rack travel mm : -5.50
Tolerance mm : \pm 0.05

Pressure hPa : 780
rack travel mm : -1.30
Tolerance mm : \pm 0.10

Pressure hPa : 1450
rack travel mm : 0.30
Tolerance mm : \pm 0.05

Pressure hPa : 1550
rack travel mm : 0.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80

A03

Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 272.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.5

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0

cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.01.95
Test oil : ISO 4113

Combination No. : 0 402 676 818

Injection pump
Pump designation : PE6P120A320RS7326
EP type number : 0 412 626 915

Governor
Governor design. : RSV275...1000P1A573
Governor no. : 0 421 833 429

Cust. part No. : 1265070/3

Customer spec. information
Customer : DAF
Motor : WS 268 L AG
Power KW : 268.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

A05

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 14.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.95

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 235.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.00

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 235.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 107.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.95

Rated speed rpm : 1032

Tolerance 1/min : \pm 8

rack travel mm : 4.00

Rated speed rpm : 1100

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1250

rack travel mm : 4.00

Rated speed rpm : 1110

LOW IDLE

control lever

position degree : 72.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 275

rack travel mm : 5.00

Testing:

Rated speed rpm : 275

rack travel mm : 6.00

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 360

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 850

rack travel mm : 14.95

Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 14.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 14.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 490
rack travel mm : 14.25
Tolerance mm : \pm 0.05

Pressure hPa : 280
rack travel mm : 12.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.95
Rated speed rpm : 1032
Tolerance 1/min : \pm 8

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.95

Test oil : ISO 4113

Combination No. : 0 402 746 651

Injection pump

Pump designation : PES6P120A320RS7374

EP type number : 0 412 726 938

Governor

Governer design. : RQV350...900PA935-1

Governer no. : 0 421 813 820

Cust. part No. : 15 550 98 4T

Customer-spec. information

Customer : BAUDOUIN

Motor : 6P15-2

Power KW : 441.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 074

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.65

Tolerance mm : ± 0.05

Check tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 340.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : ± 0.25

Rated speed rpm : 960
guide sleeve
travel mm : 8.69
Tolerance mm : ± 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.92
Tolerance mm : ± 0.25

Rated speed rpm : 369
guide sleeve
travel mm : 1.82
Tolerance mm : ± 0.25

Rated speed rpm : 419
guide sleeve
travel mm : 2.54
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.33
Tolerance mm : ± 0.25

Rated speed rpm : 1150
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1010

Rack travel in mm : 11.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 340.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1015
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 87.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 250

CRT mm min. : > 7.50

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.05
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : ± 5

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 20.0
cm3/1000 strokes : ± 3.0
Check tolerance
cm3/1000s. : ± 6.0
Spreed

A10

cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.05.96
Test oil : ISO 4113

Combination No. : 0 402 746 952

Injection pump
Pump designation : PES6P120A32ORS7294
EP type number : 0 412 726 895

Governor
Governor design. : RQV275...1000PA1001
 : -2
Governor no. : 0 421 813 989

Cust. part No. : CCEP-5136 66-214

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 74.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 290.0

cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Speed
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

Rated speed rpm : 300

Rack travel in mm : -8.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 31.0
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Speed
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 1.66
Tolerance mm : + 0.10

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : + 0.10

Rated speed rpm : 773
guide sleeve
travel mm : 6.09
Tolerance mm : + 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : + 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : + 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : + 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1200

Rack travel in mm : 12.20
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 290.0
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Speed
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 15.0

CONTROL LEVER

control lever
position degree : 301.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : -9.30
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : -12.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 247.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -6.80

Rated speed rpm : 365

TOPQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : -4.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.80
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : -2.60
Tolerance mm : \pm 0.20

Pressure hPa : 480
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 270.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 31.0
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.95
Test oil : ISO 4113

Combination No. : 0 402 746 993

Injection pump
Pump designation : PES6P120A720LS7341
EP type number : 0 412 726 913

Governor
Governor design. : RQV350...1150PA1159
Governor no. : 0 421 814 099

Cust. part No. : 0250742302

Customer-spec. information

Customer : MTU
Motor : 6-R-183
Power KW : 440.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. L/h : 90
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 273.0
cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed cm ³ /1000 strokes	: 9.0
Check tolerance cm ³ /1000S.	: 12.0
Rated speed rpm	: 350

Rack travel in mm	: 4.10
Tolerance mm	: +- 0.10
Del. quantity cm ³ /1000 strokes	: 17.0
cm ³ /1000 strokes	: +- 3.0
Check tolerance cm ³ /1000S.	: +- 6.0
Spreed cm ³ /1000 strokes	: 12.0
Check tolerance cm ³ /1000S.	: 16.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve travel mm	: 1.53
Tolerance mm	: +- 0.15

Rated speed rpm	: 1206
guide sleeve travel mm	: 8.35
Tolerance mm	: +- 0.20

Rated speed rpm	: 950
guide sleeve travel mm	: 5.78
Tolerance mm	: +- 0.25

Rated speed rpm	: 416
guide sleeve travel mm	: 2.77
Tolerance mm	: +- 0.25

Rated speed rpm	: 466
guide sleeve travel mm	: 3.35

Tolerance mm	: +- 0.25
Rated speed rpm	: 600
guide sleeve travel mm	: 3.83
Tolerance mm	: +- 0.25

Rated speed rpm	: 1308
guide sleeve travel mm	: 10.00
Tolerance mm	: +- 0.25

Rated speed rpm	: 1410
guide sleeve travel mm	: 11.50
Tolerance mm	: +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1260
-----------------	--------

Rack travel in mm	: 13.00
Tolerance mm	: +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 800
Del. quantity cm ³ /1000 strokes	: 273.0
cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed cm ³ /1000 strokes	: 9.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 120.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 13.50
Rated speed rpm	: 1195
Tolerance 1/min	: +- 5

rack travel mm	: 4.00
Rated speed rpm	: 1300
Tolerance 1/min	: +- 15

rack travel mm	: 0.75
----------------	--------

Tolerance mm : + 0.75
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 5.60

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 10.20
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 14.50
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 14.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.20
Tolerance mm : + 0.20

Pressure hPa : 200
rack travel mm : 7.10
Tolerance mm : + 0.05

Pressure hPa : 400
rack travel mm : 9.10
Tolerance mm : + 0.10

Pressure hPa : 1300
rack travel mm : 11.70
Tolerance mm : + 0.05

Pressure hPa : 1700
rack travel mm : 13.80
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 220
Rated speed rpm : < 270

Check
speed 1/min : > 200
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 344.0
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 4.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 127.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1195
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 420.0
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

End of test specification sheet

Note remarks

Edition : 25.09.95
Test oil : ISO 4113

Injection pump
Pump designation : PE6P110A320RS8036
EP type number : 0 412 816 012

Governor
Governor design. : RGV300...1200PA1043
: -1
Governor no. : 0 421 814 150

Cust. part No. : 11030925
: -P02 v.02.95

Customer : VME
Motor : TD73KFE
Power KW : 173.0

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : \pm 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure : 208.5
bar
Tolerance bar : \pm 1.5

Test Lines : 1 680 750 008

x inside diameter : 2.0
x length mm : 600

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm	:	3.85
Tolerance mm	:	+ 0.05
Check		
tolerance mm	:	+ 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.30
Check
tolerance *NW : + 0.50
```

Start of delivery mark

Barrel no. : 1

Rated speed rpm : 700

Rack travel in mm : 11.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 182.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 24.0
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.19
Tolerance mm : + 0.25

Rated speed rpm : 1256
guide sleeve
travel mm : 8.23
Tolerance mm : + 0.25

Rated speed rpm : 857
guide sleeve
travel mm : 5.21
Tolerance mm : + 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : + 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.04

A20

Tolerance mm : + 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1285

Rack travel in mm : 16.50
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 182.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : + 4.0

control lever
position degree : 115.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1345
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.60

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.10
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 740
rack travel mm : 2.90
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 24.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 641

Injection pump
Pump designation : PES6P120A320LS7337
EP type number : 0 412 726 910

Governor
Governor design. : RQV350...1100PA1200K
Governor no. : 0 421 815 453

Cust. part No. : 1823959C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-531
Power KW : 205.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 213.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 6.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 30.5
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 213.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 119.0

tolerance degree : + 6.0

RATED SPEED

rack travel mm : 12.90

Rated speed rpm : 1155

Tolerance 1/min : + 15

A23

rack travel mm : 4.00
Rated speed rpm : 1290
Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.90
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 8.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.45
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 12.80
Tolerance mm : + 0.10

Rated speed rpm : 1100
rack travel mm : 14.00
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 13.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200
rack travel mm : 14.45
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1000

Pressure hPa : 755
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 280
rack travel mm : 11.50
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 280

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 197.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 129.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1155

Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 30.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113
Combination No. : 0 402 746 643
Injection pump
Pump designation : PES6P120A320LS7362
EP type number : 0 412 726 929
Governor
Governor design. : RQV350...1100PA1201K
Governor no. : 0 421 815 456

Cust. part No. : 1824681C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-530
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 278.5

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 24.0

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000S. : ± 5.0

Spread

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1700

Del. quantity

cm³/1000 strokes : 278.5

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 121.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.50

Rated speed rpm : 1065

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1225

LOW IDLE

control lever

position degree : 78.0

tolerance degree : ± 6.0

Testing:

Rated speed rpm : 350

rack travel mm : 5.90

Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 8.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 14.65

Tolerance mm : ± 0.05

Rated speed rpm : 650

rack travel mm : 13.75

Tolerance mm : ± 0.10

Rated speed rpm : 750

rack travel mm : 14.00

Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000

Pressure hPa : 1700

rack travel mm : 14.65

Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1000

rack travel mm : 10.55

Tolerance mm : ± 0.20

Rated speed rpm : 1000

Pressure hPa : 1130

rack travel mm : 13.50

Tolerance mm : \pm 0.20
Pressure hPa : 420
rack travel mm : 11.55
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 280

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1700
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 262.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 135.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1065
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 168.0
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 24.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113
Combination No. : 0 402 746 644
Injection pump
Pump designation : PES6P120A320LS7362
EP type number : 0 412 726 929
Governor
Governor design. : RQV350...1100PA1202K
Governor no. : 0 421 815 457
Cust. part No. : 1824682C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-530
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 103
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 1.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000
Rack travel in mm : 14.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 278.5
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 24.5

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000S. : ± 5.0

Spread

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1800

Del. quantity

cm³/1000 strokes : 278.5

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 118.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.05

Rated speed rpm : 1160

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1290

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 78.0

tolerance degree : ± 6.0

Testing:

Rated speed rpm : 350

rack travel mm : 5.90

Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 8.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 14.65

Tolerance mm : ± 0.05

Rated speed rpm : 650

rack travel mm : 12.80

Tolerance mm : ± 0.20

Rated speed rpm : 1100

rack travel mm : 14.15

Tolerance mm : ± 0.10

Rated speed rpm : 750

rack travel mm : 13.20

Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000

Pressure hPa : 1800

rack travel mm : 14.65

Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1000

rack travel mm : 10.60

Tolerance mm : ± 0.20

Rated speed rpm : 1000
Pressure hPa : 1220
rack travel mm : 14.00
Tolerance mm : \pm 0.20
Pressure hPa : 440
rack travel mm : 11.85
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 280
Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 249.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 155.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.05
Rated speed rpm : 1160
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80

B02

Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 168.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 24.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113

Combination No. : 9 400 030 721

Injection pump
Pump designation : PES6A95D320/3RS2895
EP type number : 9 410 037 238

Governor
Governor design. : RSV475...1250A0C839R
Governor no. :

Cust. part No. : 3929601

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 107.5

cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance cm3/1000S.	: + 3.0
<hr/>	
Speed cm3/1000 strokes	: 3.5
<hr/>	
Check tolerance cm3/1000S.	: 6.0
Rated speed rpm	: 550
<hr/>	
Rack travel in mm	: 5.50
Tolerance mm	: + 0.10
Del. quantity cm3/1000 strokes	: 17.5
cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 4.5
Speed cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
<hr/>	
governor spring pre-tension click setting x	: 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure hPa	: 900
Del. quantity cm3/1000 strokes	: 107.5
cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 3.0
Speed cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 108.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.80
Rated speed rpm	: 1325
Tolerance 1/min	: + 5

rack travel mm	: 5.80
Rated speed rpm	: 1385
Tolerance 1/min	: + 5

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1450

rack travel mm	: 5.80
Rated speed rpm	: 1385

LOW IDLE

control lever position degree	: 78.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 550
rack travel mm	: 5.00

Testing:

Rated speed rpm	: 550
rack travel mm	: 5.50
Tolerance mm	: + 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min.	: > 19.00
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TORQUE CONTROL

Rated speed rpm	: 1250
rack travel mm	: 12.70
Tolerance mm	: + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 480
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 11.40
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 72.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
cm³/1000 strokes : \pm 10.0

Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 17.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113

Combination No. : 9 400 030 730

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100AOC844R
Governor no. : 9 420 034 710

Cust. part No. : 3928599

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

B06

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	96.0
<hr/>	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 3.0
<hr/>	
Speed	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
<hr/>	
Rated speed rpm :	475
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Rack travel in mm :	5.50
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	22.0
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Speed	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1100
Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	96.0
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Speed	
cm ³ /1000 strokes :	3.5

Check tolerance	
cm ³ /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	106.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.50
Rated speed rpm :	1155
Tolerance 1/min :	+ 5

rack travel mm :	6.00
Rated speed rpm :	1225
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1300

rack travel mm :	6.00
Rated speed rpm :	1225

LOW IDLE

control lever	
position degree :	85.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	475
rack travel mm :	5.00

Testing:

Rated speed rpm :	475
rack travel mm :	5.50
Tolerance mm :	+ 0.10

Rated speed rpm :	100
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CRT mm min. :	> 19.00
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TORQUE CONTROL

Rated speed rpm :	1100
rack travel mm :	11.55
Tolerance mm :	+ 0.05

Rated speed rpm :	1000
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rack travel mm : 12.50
Tolerance mm : + 0.10

Rated speed rpm : 800
rack travel mm : 12.60
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.90
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 11.90
Tolerance mm : + 0.20

Pressure hPa : 360
rack travel mm : 10.40
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 110.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

B08

Rack travel in mm : 10.50
Rated speed rpm : 1155
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 120.5
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 22.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.10.96
Test oil : ISO 4113

Combination No. : 9 400 030 736

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. :
Governor no. : 9 420 034 715

Cust. part No. : 3929769

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 88.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 80.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 425

Rack travel in mm : 5.10

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 18.5

cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring

pre-tension

click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 80.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 114.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.50

Rated speed rpm : 1280

Tolerance 1/min : ± 5

rack travel mm : 5.60

Rated speed rpm : 1335

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1465

rack travel mm : 5.60

Rated speed rpm : 1335

LOW IDLE

control lever

position degree : 88.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 425

rack travel mm : 4.60

Testing:

Rated speed rpm : 425

rack travel mm : 5.10

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 9.55

Tolerance mm : ± 0.05

Rated speed rpm : 800

BREAKAWAY

Rack travel in mm : 8.50
Rated speed rpm : 1280
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 18.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.96
Test oil : ISO 4113
Combination No. : 0 400 075 952
Injection pump
Pump designation : PES5M55C320RS170
EP type number : 0 410 055 977
Governor
Governor design. : RSF350/2300M56-5
Governor no. : 0 420 021 112

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM602-ECE
Power KW : 66.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 469 990 351
Inlet press. bar : 1.0
Test nozzle holder
assembly : 1 688 901 111
Opening pressure
bar : 148.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 4- 5- 3

Phasing : 0-72-144-216-288

Start of delivery blocking

*NW after s.o.d. : 19.50
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 33.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 1.5

Speed
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 3.0

Rated speed rpm : 350

Rack travel in mm : 6.60

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 6.8

cm³/1000 strokes : \pm 0.5

Speed

cm³/1000 strokes : 1.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

IDLE STAGE

Rack travel in mm : 6.50

Tolerance mm : \pm 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Ref. pressure

ALDA / ADA hPa : 1100

Del. quantity

cm³/1000 strokes : 33.5

cm³/1000 strokes : \pm 0.5

Check tolerance

cm³/1000S. : \pm 1.5

Speed

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 3.0

RATED SPEED

control lever

position degree : 50.0

Rated speed rpm : 2500

rack travel mm : 8.70

Tolerance mm : \pm 0.20

Rated speed rpm : 2950

rack travel mm : 0.50

Tolerance mm : \pm 0.50

SET IDLE CONTROL LEVER POSITION

Rated speed rpm : 1000

CRT mm max. : 1.25

LOW IDLE

control lever

position degree : 14.0

tolerance degree : \pm 2.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 6.60

SET IDLE AUXILIARY SPRING

Rated speed rpm : 400

rack travel mm : 5.50

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 720

Tolerance 1/min : \pm 50

Load pick-up

Rated speed rpm : 220

rack travel mm : $>$ 9.50

Rated speed rpm : 1000

CRT mm max. : 1.25

rack travel mm : 6.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 12.35

Tolerance mm : \pm 0.05

Rated speed rpm : 1800

rack travel mm : 11.80

Tolerance mm : \pm 0.10

Rated speed rpm : 2200

rack travel mm : 11.50

Tolerance mm : \pm 0.10

ADJUSTMENT TEST ADA/ALDA

SETTING

Rated speed rpm : 1000

Ref. pressure
ALDA / ADA hPa : 950
rack travel mm : -0.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1000
Ref. pressure
ALDA / ADA hPa : 900
rack travel mm : -0.60
Tolerance mm : ± 0.10

Ref. pressure
ALDA / ADA hPa : 750
rack travel mm : -2.00
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 1800
Del. quantity
cm3/1000 strokes : 33.8
cm3/1000 strokes : ± 0.8
Check tolerance
cm3/1000S. : ± 1.8
Spreed
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2200
Spreed
Del. quantity
cm3/1000 strokes : 35.0
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 2.0
Spreed
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

HIGH IDLE

Ref. pressure
ALDA / ADA hPa : 1100
Rated speed rpm : 2500
rack travel mm : 8.70
Tolerance mm : ± 0.20
Del. quantity
cm3/1000 strokes : 24.0

cm3/1000 strokes : ± 2.0
Check tolerance
cm3/1000S. : ± 3.0
Spreed
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : > 20.10
Del. quantity
cm3/1000 strokes : 52.0
Spreed
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 7.8
Check tolerance
cm3/1000S. : ± 2.3
Spreed
Check tolerance
cm3/1000S. : 1.5

control lever
position degree : > 49.00

control lever
position degree : < 46.50

SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : ± 2.0

Rated speed rpm : 400

Rack travel in mm : 7.50
Tolerance mm : ± 0.80

Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : ± 3.5
Check tolerance
cm³/1000S. : ± 4.5
Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 350
Vacuum hPa : -450.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.10.96
Test oil : ISO 4113

Combination No. : 0 402 076 801

Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1382923

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.75

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 263.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 6.00

Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 20.0

cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 263.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 33.0
tolerance degree : \pm 4.0

control lever
position degree : 83.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 15.70

Rated speed rpm : 788
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 15.70

Rated speed rpm : 789
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 15.70

Rated speed rpm : 790
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 15.70

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm	:	850
Rated speed rpm	:	754
rack travel mm	:	15.70
Rated speed rpm	:	792
Tolerance 1/min	:	± 4
rack travel mm	:	4.00
rack travel mm	:	0.85
Tolerance mm	:	± 0.55
Rated speed rpm	:	850
Rated speed rpm	:	755
rack travel mm	:	15.70
Rated speed rpm	:	793
Tolerance 1/min	:	± 4
rack travel mm	:	4.00
rack travel mm	:	0.85
Tolerance mm	:	± 0.55
Rated speed rpm	:	850

TORQUE CONTROL

Rated speed rpm	:	700
rack travel mm	:	16.75
Tolerance mm	:	± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	:	500
Pressure hPa	:	1500
rack travel mm	:	16.75
Tolerance mm	:	± 0.05

MEASUREMENT

Pressure hPa	:	-
Rated speed rpm	:	500
rack travel mm	:	13.50
Tolerance mm	:	± 0.20

Rated speed rpm	:	500
-----------------	---	-----

Pressure hPa	:	295
rack travel mm	:	14.30
Tolerance mm	:	± 0.20

Pressure hPa	:	640
rack travel mm	:	16.00
Tolerance mm	:	± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	:	-
hPa	:	-
Rated speed rpm	:	500
Del. quantity	:	-
cm ³ /1000 strokes	:	188.0
cm ³ /1000 strokes	:	± 1.0
Check tolerance	:	-
cm ³ /1000s.	:	± 4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	13.50
Tolerance mm	:	± 0.20
Del. quantity	:	-
cm ³ /1000 strokes	:	140.0
cm ³ /1000 strokes	:	± 20.0
Check tolerance	:	-
cm ³ /1000s.	:	± 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.10.96
Test oil : ISO 4113

Combination No. : 0 402 076 802

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1385930

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 226.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 226.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : + 4.0

control lever
position degree : 104.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1215

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 4.0

control lever
position degree : 23.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 555
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 165.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 18.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Ex. tion : 15.10.96
Test oil : ISO 4113

Combination No. : 0 402 648 974

Injection pump
Pump designation : PE8P120A320LS7875
EP type number : 0 412 628 881

Governor
Governor design. : RQ250/1150PA1122
Governor no. : 0 421 801 704

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : V2-8TC

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 16.00
Tolerance mm : ± 1.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 208.0

cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
cm3/1000 strokes : 7.0

Check tolerance
cm3/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 5.80

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 18.0

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 6.0

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 2.39

Tolerance mm : + 0.10

Rated speed rpm : 1207

guide sleeve

travel mm : 6.36

Tolerance mm : + 0.10

Rated speed rpm : 650

guide sleeve

travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 382

guide sleeve

travel mm : 5.26

Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 6.00

Tolerance mm : + 0.10

Rated speed rpm : 1370

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure

hPa : -

Del. quantity

cm3/1000 strokes : 208.0

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 4.0

Spread

cm3/1000 strokes : 7.0

Check tolerance

cm3/1000S. : 10.0

CONTROL LEVER

control lever

position degree : 34.0

tolerance degree : + 4.0

control lever

position degree : 95.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1202

Tolerance 1/min : + 8

rack travel mm : 4.00

Rated speed rpm : 1280

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 375
Tolerance 1/min : \pm 20

Rated speed rpm : 200
CRT mm min. : $>$ 9.20

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 13.60
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 250

rack travel mm : 10.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 205
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 185

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 226.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 137.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1202
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 203.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 18.0
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : ± 6.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113

Combination No. : 0 402 676 825

Injection pump
Pump designation : PE6P120A320RS7430
EP type number : 0 412 626 960

Governor
Governor design. : RSV300...850P1A614
Governor no. : 0 421 833 502

Cust. part No. : 11031231 P04 v.08/96

Customer-spec. information
Customer : VCE
Motor : TD 103 KAE
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 306.0

cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 4.0
<hr/>	
Spreed cm ³ /1000 strokes	: 7.0
<hr/>	
Check tolerance cm ³ /1000S.	: 11.0
<hr/>	
Rated speed rpm	: 325
<hr/>	
Rack travel in mm	: 4.20
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 34.0
cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
<hr/>	
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 500
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 306.0
cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

CONTROL LEVER

control lever position degree	: 83.0
tolerance degree	: ± 4.0

control lever position degree	: 106.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.60
Rated speed rpm	: 875
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 950
Tolerance 1/min	: ± 15

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1100

LOW IDLE

control lever position degree	: 56.0
tolerance degree	: ± 4.0

control lever position degree	: 33.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
rack travel mm	: 3.80

Testing:

Rated speed rpm	: 325
rack travel mm	: 4.20
Tolerance mm	: ± 0.10

rack travel mm	: 2.00
Rated speed rpm	: 425
Tolerance 1/min	: ± 30

TORQUE CONTROL

Rated speed rpm	: 500
rack travel mm	: 12.20
Tolerance mm	: ± 0.05

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 570
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 680
rack travel mm : 3.40
Tolerance mm : \pm 0.20

Pressure hPa : 180
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 258.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 198.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 875
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 34.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113

Combination No. : 0 402 698 033F1

Injection pump
Pump designation : PE8H120/320LS3-2
EP type number :

Governor
Governor design. : RE36 (FD 57102 - FD 57108)
Governor no. :

Cust. part No. : 0250745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

C01

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

C02

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid
Stroke mm : 7.40
Del. quantity
cm3/1000 strokes : 347.0
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm3/1000 strokes : 334.0
Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid
Stroke mm : 9.50
Del. quantity
cm3/1000 strokes : 354.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.060
Prestroke solenoid
Stroke mm : 8.00

Del. quantity
cm3/1000 strokes : 37.0
cm3/1000 strokes : +- 3.0
Spreed
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000s. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm3/1000 strokes : 114.0
cm3/1000 strokes : +- 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113
Combination No. : 0 402 698 033F2
Injection pump
Pump designation : PE8H120/320LS3-2
EP type number :
Governor
Governor design. : RE36 (FD 57109 - FD 66213)
Governor no. :

Cust. part No. : 0250745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

C04

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, U_{act} = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : ± 0.25
Check
tolerance mm : ± 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : ± 0.25
Check
tolerance mm : ± 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : ± 0.25
Check
tolerance mm : ± 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : ± 0.6
Check
tolerance V : ± 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid
Stroke mm : 7.40
Del. quantity
cm³/1000 strokes : 350.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm³/1000 strokes : 336.0

Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid
Stroke mm : 9.50
Del. quantity
cm³/1000 strokes : 357.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : ± 0.060
Check tolerance
Volt : ± 0.060
Prestroke solenoid
Stroke mm : 8.00

Del. quantity
cm³/1000 strokes : 40.0
cm³/1000 strokes : ± 3.0
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm³/1000 strokes : 117.0
cm³/1000 strokes : ± 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.96
Test oil : ISO 4113

Combination No. : 0 402 698 033F3

Injection pump
Pump designation : PE8H120/320LS3-2
EP type number :

Governor
Governor design. : RE36 (FD 66214 - FD 66231)
Governor no. :

Cust. part No. : 0250745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM 442 LA

TEST BENCH REQUIREMENTS

Inlet Line : 3.2 ELAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

C07

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 7.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 8

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 2.800
Prestroke solenoid
Stroke mm : 7.40
Del. quantity
cm3/1000 strokes : 344.0
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.900
Prestroke solenoid
Stroke mm : 8.00
Del. quantity
cm3/1000 strokes : 331.0
Rated speed rpm : 550
Uact V : 2.700
Prestroke solenoid
Stroke mm : 9.50
Del. quantity
cm3/1000 strokes : 351.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.500
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.060
Prestroke solenoid
Stroke mm : 8.00

Del. quantity
cm³/1000 strokes : 34.0
cm³/1000 strokes : ± 3.0
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 1.900
Prestroke solenoid
Stroke mm : 10.00
Del. quantity
cm³/1000 strokes : 111.0
cm³/1000 strokes : ± 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.10.96
Test oil : ISO 4113

Combination No. : 0 402 796 037

Injection pump
Pump designation : PES6H110/320RS13
EP type number : 0 412 716 003

Governor
Governor design. : RE36
Governor no. : 0 421 890 363

Cust. part No. : 51.11103-7482

Customer-spec. information
Customer : MAN
Motor : D0826 LF13/LFL09
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3(EHAB)

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

C10

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 8.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 850
Uact V : 2.490
Prestroke solenoid
Stroke mm : 11.10
Del. quantity
cm³/1000 strokes : 224.0
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Uact V : 1.580
Prestroke solenoid
Stroke mm : 7.70
Del. quantity
cm³/1000 strokes : 95.0
Check tolerance
cm³/1000S. : +/- 8.0
Speed
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 1150
Uact V : 2.440
Prestroke solenoid
Stroke mm : 9.30
Del. quantity
cm³/1000 strokes : 206.0

cm³/1000 strokes : + 6.0
Check tolerance
cm³/1000S. : + 10.0

Rated speed rpm : 600
Uact V : 2.220
Prestroke solenoid
Stroke mm : 12.10
Del. quantity
cm³/1000 strokes : 207.0
cm³/1000 strokes : + 6.0
Check tolerance
cm³/1000S. : + 10.0

Rated speed rpm : 500
Uact V : 1.750
Prestroke solenoid
Stroke mm : 9.80
Del. quantity
cm³/1000 strokes : 135.0
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 9.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.310
Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.080
Prestroke solenoid
Stroke mm : 11.10
Del. quantity
cm³/1000 strokes : 26.0
cm³/1000 strokes : + 3.0
Spreed
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.050
Prestroke solenoid
Stroke mm : 5.50
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : + 8.0
Check tolerance
cm³/1000S. : + 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.10.96
Test oil : ISO 4113

Combination No. : 0 402 796 039

Injection pump
Pump designation : PES6H110/320RS13-1
EP type number : 0 412 716 004

Governor
Governor design. : RE36
Governor no. : 0 421 890 363

Cust. part No. : 51.11103-7529

Customer-spec. information
Customer : MAN
Motor : D0826 LF13/LFL09
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3-unten

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x Length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 8.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 850
Uact V : 2.490
Prestroke solenoid
Stroke mm : 11.10
Del. quantity
cm³/1000 strokes : 224.0
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 800
Uact V : 1.580
Prestroke solenoid
Stroke mm : 7.70
Del. quantity
cm³/1000 strokes : 95.0
Check tolerance
cm³/1000S. : +/- 8.0
Speed
Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 1150
Uact V : 2.440
Prestroke solenoid
Stroke mm : 9.30
Del. quantity
cm³/1000 strokes : 206.0

cm3/1000 strokes : + 6.0
Check tolerance
cm3/1000S. : + 10.0

Rated speed rpm : 600
Uact V : 2.220
Prestroke solenoid
Stroke mm : 12.10
Del. quantity
cm3/1000 strokes : 207.0
cm3/1000 strokes : + 6.0
Check tolerance
cm3/1000S. : + 10.0

Rated speed rpm : 500
Uact V : 1.750
Prestroke solenoid
Stroke mm : 9.80
Del. quantity
cm3/1000 strokes : 135.0
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000S. : + 9.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.310
Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.080
Prestroke solenoid
Stroke mm : 11.10
Del. quantity
cm3/1000 strokes : 26.0
cm3/1000 strokes : + 3.0
Spreed
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 11.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 2.050
Prestroke solenoid
Stroke mm : 5.50
Del. quantity
cm3/1000 strokes : 130.0
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000S. : + 12.0

End of test specification sheet

Note remarks

Edition : 16.10.96
Test oil : ISO 4113

Injection pump
Pump designation : PE6P110A320RS8042
EP type number : 0 412 816 013

Governor
Governor design. : RQV300...1200PA1043
: -1
Governor no. : 0 421 814 150

Cust. part No. : 11032710
: -P01 v.08.96

Customer : VCE
Motor : TD73KFE
Power KW : 171.0

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 2.5
Tolerance bar : \pm 0.1

Opening pressure : 208.5
Tolerance bar : \pm 1.5

C16

x inside diameter : 2.0
x length mm : 600

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

```
Prestroke mm      :      3.85
Tolerance mm      :  +-  0.05
Check
tolerance mm      :  +-  0.10
```

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Rated speed rpm : 700

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 24.0

cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.17
Tolerance mm : + 0.20

Rated speed rpm : 1256
guide sleeve
travel mm : 8.23
Tolerance mm : + 0.15

Rated speed rpm : 857
guide sleeve
travel mm : 5.21
Tolerance mm : + 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : + 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1393

Rack travel in mm : 10.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 182.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : + 4.0

control lever
position degree : 113.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1335
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

control lever
position degree : 16.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 8.53

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.10
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 730
rack travel mm : 2.90
Tolerance mm : \pm 0.20

Pressure hPa : 230
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 24.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113

Combination No. : 0 402 846 075

Injection pump
Pump designation : PE6P110A320RS8042
EP type number : 0 412 816 013

Governor
Governor design. : RQV300...1050PA1183
 : -1
Governor no. : 0 421 814 159

Cust. part No. : 11032711
 : -P01 V.08/96

Customer-spec. information
Customer : VCE
Motor : TD 73 KDE
Power KW : 153.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

C19

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 11.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 178.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50

Tolerance mm : + 0.30

Del. quantity

cm³/1000 strokes : 24.0

cm³/1000 strokes : + 2.5

Check tolerance

cm³/1000S. : + 5.0

Spreed

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.17

Tolerance mm : + 0.20

Rated speed rpm : 1107

guide sleeve

travel mm : 7.86

Tolerance mm : + 0.15

Rated speed rpm : 804

guide sleeve

travel mm : 5.19

Tolerance mm : + 0.25

Rated speed rpm : 530

guide sleeve

travel mm : 3.11

Tolerance mm : + 0.25

Rated speed rpm : 1400

guide sleeve

travel mm : 11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1259

Rack travel in mm : 9.80

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : 1500

Del. quantity

cm³/1000 strokes : 178.0

cm³/1000 strokes : + 1.0

Check tolerance

cm³/1000S. : + 3.0

Spreed

cm³/1000 strokes : 7.0

Check tolerance

cm³/1000S. : 11.0

CONTROL LEVER

control lever

position degree : 45.0

tolerance degree : + 4.0

control lever

position degree : 112.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.90

Rated speed rpm : 1095

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1175

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 82.0

tolerance degree : + 4.0

control lever

position degree : 16.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.30

Rated speed rpm : 200
CRT mm min. : $>$ 7.50
Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 710
rack travel mm : 2.60
Tolerance mm : \pm 0.20

Pressure hPa : 270
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 117.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 24.0
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.10.96
Test oil : ISO 4113

Combination No. : 0 402 846 081

Injection pump
Pump designation : PE6P120A32ORS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...950PA1321
Governor no. : 0 421 814 186

Cust. part No. : 11127026
: -P02 V.08/96

Customer-spec. information
Customer : VCE
Motor : TD122KLE
Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 279.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.20

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 23.0

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000S. : + 6.0

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.17

Tolerance mm : + 0.20

Rated speed rpm : 1097

guide sleeve

travel mm : 8.26

Tolerance mm : + 0.15

Rated speed rpm : 854

guide sleeve

travel mm : 6.04

Tolerance mm : + 0.25

Rated speed rpm : 580

guide sleeve

travel mm : 3.53

Tolerance mm : + 0.25

Rated speed rpm : 1360

guide sleeve

travel mm : 11.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1120

Rack travel in mm : 9.80

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure

hPa : 1500

Del. quantity

cm3/1000 strokes : 279.0

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 4.0

Spreed

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. : 11.0

CONTROL LEVER

control lever

position degree : 50.0

tolerance degree : + 4.0

control lever

position degree : 106.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.90

Rated speed rpm : 1015

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1105

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1210

LOW IDLE

control lever

position degree : 72.0

tolerance degree : + 4.0

control lever

position degree : 16.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 8.60
Tolerance mm : \pm 0.10

Rated speed rpm : 550

Pressure hPa : 640
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 208.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1015
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113

Combination No. : 0 402 946 024

Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQ750PA1299
Governor no. : 0 421 801 810

Cust. part No. : 1388641

Customer-spec. information
Customer : SCANIA
Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 363.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 10.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 3.30
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 30.0

cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 5.07
Tolerance mm : \pm 0.15

Rated speed rpm : 795
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 850
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 363.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 10.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 28.0
tolerance degree : \pm 4.0

control lever
position degree : 89.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.70

Rated speed rpm : 778
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 12.70

Rated speed rpm : 779
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 12.70

Rated speed rpm : 780
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 12.70

Rated speed rpm : 781
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 12.70

Rated speed rpm : 782
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 12.70

Rated speed rpm : 783
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : 9.80
Tolerance mm : \pm 0.25

Pressure hPa : 820
rack travel mm : 12.40
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 218.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.96
Test oil : ISO 4113
Combination No. : 9 400 083 430
Injection pump
Pump designation : PES6A80D32G/3RS1261
EP type number : 9 400 083 057
Governor
Governor design. : RSV350...1200A2C627R
Governor no. : 9 420 083 288

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D225-6

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

C28

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Pilasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 51.0

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

governor spring
pre-tension
click setting x : 4.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 51.0
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 50.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.40
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 20.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 520
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 9.45
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 10.90
Tolerance mm : ± 0.30

BREAKAWAY

Rack travel in mm : 8.40
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.96
Test oil : ISO 4113

Combination No. : 9 400 085 293

Injection pump
Pump designation : PES6A80D410RS2755
EP type number : 9 400 093 005

Governor
Governor design. : RQV300...1400AB1234L
Governor no. : 9 420 080 241

Cust. part No. :

Customer-spec. information
Customer : DEUTZ-ARGENTINA
Motor : F 6 L 913

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

D03

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 69.5

cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.0

Speed
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.0

Rated speed rpm : 300

Rack travel in mm : 6.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 10.0
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 3.5
 Spreed
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1460
 guide sleeve
 travel mm : 8.50
 Tolerance mm : + 0.10

Rated speed rpm : 775
 guide sleeve
 travel mm : 4.35
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.95
 Tolerance mm : + 0.25

Rated speed rpm : 550
 guide sleeve
 travel mm : 2.85
 Tolerance mm : + 0.15

Rated speed rpm : 950
 guide sleeve
 travel mm : 5.35
 Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

Rated speed rpm : 1420
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 69.5
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.0
 Spreed
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1585
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1700

LOW IDLE

control lever
 position degree : 10.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 6.00
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 7.50

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 12.05
 Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
rack travel mm : 12.35
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 64.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 68.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

Note remarks

Edition : 14.10.96
Test oil : ISO 4113

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Cust. part No. : 024 074 36 02

Customer : MBB
Motor : OM 366 LA
Power KW : 150.0

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Test nozzle holder assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

```
Prestroke mm      : 3.25
Tolerance mm      : + 0.05
Check
tolerance mm      : + 0.10
```

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Rated speed rpm : 1300

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 104.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 104.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 109.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Pressure hPa : 520
rack travel mm : 1.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 94.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 76.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113
Combination No. : 9 400 085 383
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1066
: -13L
Governor no. : 9 420 080 332
Cust. part No. : 026 074 53 02

Customer-spec. information
Customer : MBB
Motor : OM 366 LA-EURO 1
Power KW : 147.1

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 104.0

cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000s. : ± 3.0

Spreed
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 104.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

control lever
position degree : 109.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : + 4.0

control lever
position degree : 19.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Pressure hPa : 520
rack travel mm : 1.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 94.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 76.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.10.96
Test oil : ISO 4113
Combination No. : 9 400 085 378
Injection pump
Pump designation : PES6A100D320/3RS2827
EP type number : 9 400 084 030
Governor
Governor design. : RSV400...900A7C2209
: -4R
Governor no. : 9 420 083 301
Cust. part No. : 3355291

Customer-spec. information
Customer : CUMMINS
Motor : 6 CTA 240
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference °CS : 4.00

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 13.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 159.5

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 400

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 11.0

cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 880

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 159.5

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 108.0

tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 923
rack travel mm : 12.00

Rated speed rpm : 963
Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1100

Rated speed rpm : 924

rack travel mm : 12.00

Rated speed rpm : 964

Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1100

Rated speed rpm : 925

rack travel mm : 12.00

Rated speed rpm : 965

Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1100

Rated speed rpm : 926

rack travel mm : 12.00

Rated speed rpm : 966

Tolerance 1/min : \pm 4

rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1100
 Rated speed rpm : 927
 rack travel mm : 12.00
 Rated speed rpm : 967
 Tolerance 1/min : + 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1100
 Rated speed rpm : 928
 rack travel mm : 12.00
 Rated speed rpm : 968
 Tolerance 1/min : + 4
 rack travel mm : 4.00
 rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1100

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0
 Setting point w/out bumper spring
 Rated speed rpm : 400
 rack travel mm : 3.70
 Testing:
 Rated speed rpm : 400
 rack travel mm : 4.20
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 435
 Tolerance 1/min : + 30
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 880
 rack travel mm : 13.05
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 13.10

Tolerance mm : + 0.10
 Rated speed rpm : 350
 rack travel mm : 14.40
 Tolerance mm : + 0.30

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.00
 Tolerance mm : + 1.00
 Del. quantity
 cm3/1000 strokes : 166.0
 cm3/1000 strokes : + 8.0
 Check tolerance
 cm3/1000S. : + 11.0

LOW IDLE

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 11.0
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 cm3/1000 strokes : 5.5
 Check tolerance
 cm3/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.96
Test oil : ISO 4113
Combination No. : 9 400 085 385
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1306L
Governor no. : 9 420 080 384

Cust. part No. : 0260745502

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 83.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1355
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

control lever
position degree : 22.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 1.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 82.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 42.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1355
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 78.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spread
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.10.96
Test oil : ISO 4113
Combination No. : 9 400 085 388
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1306L
Governor no. : 9 420 080 384

Cust. part No. : 0260746702

Customer-spec. information
Customer : MBB
Motor : OM 366A EURO I
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 83.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1355
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

control lever
position degree : 22.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 1.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 82.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 42.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1355
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 78.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.10.96
Test oil : ISO 4113

Combination No. : 0 402 066 709

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1100POA632
Governor no. : 0 421 833 539

Cust. part No. : 3929602

Customer-spec. information
Customer : CDC
Motor : 6BTA ELITE
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.20

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 138.5

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 24.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 138.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed

cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 5.70
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.90

Testing:

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.20

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : < 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.45
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 975
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 575
rack travel mm : 9.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 170.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 24.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.10
Tolerance mm : + 0.20
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 5.0
Speed
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : + 0.20

Rated speed rpm : 1455
guide sleeve
travel mm : 9.16
Tolerance mm : + 0.15

Rated speed rpm : 931
guide sleeve
travel mm : 5.67
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18
Tolerance mm : + 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure
hPa : 1200
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.5
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : + 5

rack travel mm : 6.80
Rated speed rpm : 1580
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1725

LOW IDLE

control lever
position degree : 74.5
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.10
Tolerance mm : + 0.20

Rated speed rpm : 200

CRT mm min. : > 8.60

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.45
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.80
Tolerance mm : \pm 0.20

Rated speed rpm : 1400

Pressure hPa : 620
rack travel mm : 12.40
Tolerance mm : \pm 0.20

Pressure hPa : 280
rack travel mm : 10.70
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80

Check
speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.09.96
Test oil : ISO 4113

Combination No. : 0 402 746 652

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1500PA1222K
Governor no. : 0 421 815 466

Cust. part No. : 3897621

Customer-spec. information
Customer : CDC
Motor : 6BTA
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 12.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 212.5
cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0
Rated speed rpm	: 300

Rack travel in mm	: 6.40
Tolerance mm	: ± 0.20
Del. quantity cm ³ /1000 strokes	: 28.0
cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve travel mm	: 1.00
Tolerance mm	: ± 0.20
Rated speed rpm	: 1570
guide sleeve travel mm	: 9.90
Tolerance mm	: ± 0.15
Rated speed rpm	: 986
guide sleeve travel mm	: 5.80
Tolerance mm	: ± 0.25
Rated speed rpm	: 480
guide sleeve travel mm	: 3.00
Tolerance mm	: ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1500
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 212.5
cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 122.5
tolerance degree	: ± 6.0

RATED SPEED

rack travel mm	: 12.70
Rated speed rpm	: 1565
Tolerance 1/min	: ± 5
rack travel mm	: 5.20
Rated speed rpm	: 1695
Tolerance 1/min	: ± 15
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1760

LOW IDLE

control lever position degree	: 72.0
tolerance degree	: ± 6.0

Testing:

Rated speed rpm	: 300
rack travel mm	: 6.40
Tolerance mm	: ± 0.20
Rated speed rpm	: 225
CRT mm min.	: > 8.00
Rated speed rpm	: 350

TORQUE CONTROL

Rated speed rpm	: 1500
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rack travel mm : 13.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1500
rack travel mm : 9.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1500

Pressure hPa : 800
rack travel mm : 12.80
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 10.50
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 202.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 108.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1565
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 167.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 28.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.10.96
Test oil : ISO 4113
Combination No. : 0 402 736 910
Injection pump
Pump designation : PES6P120A72ORS7351
EP type number : 0 412 726 922
Governor
Governor design. : RQV450...1100PA1317K
Governor no. : 0 421 815 545

Cust. part No. : 3931948

Customer-spec. information

Customer : CDC
Motor : 6CTA-A
Power kW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.95
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 236.5
cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000s.	: + 4.0
Spreed cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000s.	: 9.0
Rated speed rpm	: 450

Rack travel in mm	: 6.75
Tolerance mm	: + 0.20
Del. quantity cm ³ /1000 strokes	: 32.0
cm ³ /1000 strokes	: + 3.0
Check tolerance cm ³ /1000s.	: + 5.0
Spreed cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000s.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 450
guide sleeve travel mm	: 1.33
Tolerance mm	: + 0.20

Rated speed rpm	: 1163
guide sleeve travel mm	: 7.50
Tolerance mm	: + 0.15

Rated speed rpm	: 860
guide sleeve travel mm	: 4.55
Tolerance mm	: + 0.25

Rated speed rpm	: 1560
guide sleeve travel mm	: 13.50
Tolerance mm	: + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
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E03

Aneroid pressure hPa	: 1600
Del. quantity cm ³ /1000 strokes	: 236.5
cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000s.	: + 4.0
Spreed cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000s.	: 9.0

CONTROL LEVER

control lever position degree	: 113.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 13.90
Rated speed rpm	: 1170
Tolerance 1/min	: + 15

rack travel mm	: 8.00
Rated speed rpm	: 1250
Tolerance 1/min	: + 5

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1350

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm	: 450
rack travel mm	: 6.75
Tolerance mm	: + 0.20

Rated speed rpm	: 375
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CRT mm min.	: > 7.90
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Rated speed rpm	: 525
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TORQUE CONTROL

Rated speed rpm	: 1100
rack travel mm	: 14.95

Tolerance mm : \pm 0.05
 Rated speed rpm : 750
 rack travel mm : 13.95
 Tolerance mm : \pm 0.10
 Rated speed rpm : 500
 rack travel mm : 13.60
 Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
 Pressure hPa : 1600

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 1000
 rack travel mm : 13.25
 Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 1190
 rack travel mm : 14.15
 Tolerance mm : \pm 0.20

Pressure hPa : 1050
 rack travel mm : 13.60
 Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 390

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 400

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1600
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 224.5
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spreed

cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 183.5
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.90
 Rated speed rpm : 1170
 Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 21.00
 Tolerance mm : \pm 0.50
 Del. quantity
 cm³/1000 strokes : 180.0
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 32.0
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 5.0
 Spreed
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.10.96
Test oil : ISO 4113
Combination No. : 0 402 746 612
Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940
Governor
Governor design. : RQV250...1300PA1282K
Governor no. : 0 421 815 515

Cust. part No. : 3866784

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

E05

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 155.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 28.0

cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : ± 0.20

Rated speed rpm : 1355
guide sleeve
travel mm : 8.32
Tolerance mm : ± 0.15

Rated speed rpm : 885
guide sleeve
travel mm : 5.46
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18
Tolerance mm : ± 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 155.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 114.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30

Rated speed rpm : 1375

Tolerance 1/min : ± 5

rack travel mm : 7.50

Rated speed rpm : 1465

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 75.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : ± 0.20

Rated speed rpm : 250

CRT mm min. : > 8.00

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 12.15
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1300

Pressure hPa : 450
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 255
rack travel mm : 10.60
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : < 250

Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

E07

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 152.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 104.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.30
Rated speed rpm : 1375
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 185.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 28.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 613

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1250PA1283K
Governor no. : 0 421 815 516

Cust. part No. : 3866785

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 129.5

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.40

Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 23.0

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : \pm 0.20

Rated speed rpm : 1305
guide sleeve
travel mm : 7.93
Tolerance mm : \pm 0.15

Rated speed rpm : 864
guide sleeve
travel mm : 5.36
Tolerance mm : \pm 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18
Tolerance mm : \pm 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 129.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.40
Tolerance mm : \pm 0.20

Rated speed rpm : 275

CRT mm min. : > 8.20

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 550
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 265
rack travel mm : 10.30
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

ANEROID pressure

hPa : 900
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 132.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

ANEROID pressure

hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 93.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 185.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.09.96
Test oil : ISO 4113

Combination No. : 0 401 849 759

Injection pump
Pump designation : PE10P120A520/4LS3866
EP type number : 0 411 829 712

Governor
Governor design. : RQ300/1150PA1322
Governor no. : 0 421 801 814

Cust. part No. :

Customer-spec. information
Customer : DHI
Motor : D2840L
Power KW : 382.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 192.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 6.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.11
Tolerance mm : \pm 0.10

Rated speed rpm : 1222
guide sleeve
travel mm : 6.37
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 413
guide sleeve
travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1450
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1297

Rack travel in mm : 10.98
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 192.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 31.0
tolerance degree : \pm 4.0

control lever
position degree : 93.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1217
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

control lever
position degree : 14.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.90
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 411
Tolerance 1/min : + 20

Rated speed rpm : 200

CRT mm min. : > 9.36

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.00
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 12.00
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.00
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.25
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 520

E15

rack travel mm : 11.55
Tolerance mm : + 0.20

Pressure hPa : 400
rack travel mm : 10.75
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 204.0
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1217
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.10.96
Test oil : ISO 4113
Combination No. : 0 402 046 855
Injection pump
Pump designation : PES6P110A320RS3329
EP type number : 0 412 016 743
Governor
Governor design. : RQV325...1300PA1119
Governor no. : 0 421 814 083

Cust. part No. : 1284418/4

Customer-spec. information

Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance cm3/1000S.	: + 4.0
<hr/>	
Spreed cm3/1000 strokes	: 4.0
<hr/>	
Check tolerance cm3/1000S.	: 7.5
<hr/>	
Rated speed rpm	: 325
<hr/>	
Rack travel in mm	: 4.50
Tolerance mm	: + 0.10
Del. quantity cm3/1000 strokes	: 26.0
cm3/1000 strokes	: + 2.5
Check tolerance cm3/1000S.	: + 5.0
Spreed cm3/1000 strokes	: 12.0
Check tolerance cm3/1000S.	: 15.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve travel mm	: 1.33
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 1353
guide sleeve travel mm	: 8.29
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 900
guide sleeve travel mm	: 4.92
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 405
guide sleeve travel mm	: 2.07
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 455
guide sleeve travel mm	: 2.52
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 530

guide sleeve travel mm	: 2.93
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1640
guide sleeve travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1450
<hr/>	
Rack travel in mm	: 10.80
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: 1000
Del. quantity cm3/1000 strokes	: 144.0
cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 4.0
Spreed cm3/1000 strokes	: 4.0
Check tolerance cm3/1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 122.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.85
Rated speed rpm	: 1342
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1460
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1600

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225

CRT mm min. : $>$ 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 7.35
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.96
Test oil : ISO 4113

Combination No. : 0 402 646 744

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

Customer-spec. information

Customer : KHD
Motor : BF6M1015C
Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 195
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 335.0

cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 23.0
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : + 0.20

Rated speed rpm : 1098
guide sleeve
travel mm : 10.02
Tolerance mm : + 0.15

Rated speed rpm : 860
guide sleeve
travel mm : 5.59
Tolerance mm : + 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.24
Tolerance mm : + 0.25

Rated speed rpm : 1154
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 1230

guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1130

Rack travel in mm : 12.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1700

Del. quantity
cm3/1000 strokes : 335.0
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1085
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 75.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 6.10

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1700
rack travel mm : 13.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.30
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 450
rack travel mm : 9.20
Tolerance mm : \pm 0.10

Pressure hPa : 1000
rack travel mm : 12.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 230.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1085
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 135.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.96

Test oil : ISO 4113

Combination No. : 0 402 646 771

Injection pump

Pump designation : PE6P120A320LS7836-2

EP type number : 0 412 626 944

Governor

Governer design. : RQV300...1050PA1168

: -8

Governer no. : 0 421 814 141

Cust. part No. : 0250749802

Customer-spec. information

Customer : MB-NFZ

Motor : OM401 LA

Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 95

Tolerance l/h : ± 10.0

Test nozzle holde
assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

E23

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 173.0

cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance cm3/1000S.	: + 4.0
<hr/>	
Spreed cm3/1000 strokes	: 5.0
<hr/>	
Check tolerance cm3/1000S.	: 9.0
<hr/>	
Rated speed rpm	: 300
<hr/>	
Rack travel in mm	: 3.50
Tolerance mm	: + 0.10
Del. quantity cm3/1000 strokes	: 19.0
cm3/1000 strokes	: + 3.0
Check tolerance cm3/1000S.	: + 6.0
Spreed cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.29
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 1107
guide sleeve travel mm	: 8.51
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 558
guide sleeve travel mm	: 4.53
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 608
guide sleeve travel mm	: 5.03
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 820
guide sleeve travel mm	: 6.13
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1183

guide sleeve travel mm	: 10.00
Tolerance mm	: + 0.25

Rated speed rpm	: 1280
guide sleeve travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1150
<hr/>	
Rack travel in mm	: 11.40
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 700
Del. quantity cm3/1000 strokes	: 173.0
cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 4.0
Spreed cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 119.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.40
Rated speed rpm	: 1095
Tolerance 1/min	: + 5
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rack travel mm	: 4.00
Rated speed rpm	: 1170
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.75
Tolerance mm	: + 0.75
Rated speed rpm	: 1300

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.30
Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 700
rack travel mm : 12.40
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 10.90
Tolerance mm : \pm 0.15

Rated speed rpm : 400
Pressure hPa : 200
rack travel mm : 11.45
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 12.00
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 169.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 210.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 19.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.96
Test oil : ISO 4113

Combination No. : 0 402 648 789

Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04222488KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 340.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : \pm 0.20

Rated speed rpm : 1103
guide sleeve
travel mm : 10.19
Tolerance mm : \pm 0.15

Rated speed rpm : 860
guide sleeve
travel mm : 5.59
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.24
Tolerance mm : \pm 0.25

Rated speed rpm : 1154

guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1230
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1125

Rack travel in mm : 13.00
Tolerance mm : \pm 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 340.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 6.30

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1600
rack travel mm : 14.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.00
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 570
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Pressure hPa : 1100
rack travel mm : 13.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

F01

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 250.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 150.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.96

Test oil : ISO 4113

Combination No. : 0 402 648 952

Injection pump

Pump designation : PE8P120A320LS7856

EP type number : 0 412 628 867

Governor

Governer design. : RQV350...1050PA1051

: -1

Governer no. : 0 421 814 039

Cust. part No. : 0230747202

Customer-spec. information

Customer : MB-NFZ

Motor : OM442 LA

Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity

min. l/h : 70

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.25

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 239.0
cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0
Rated speed rpm	: 350
Rack travel in mm	: 4.60
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 19.0
cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 350
guide sleeve travel mm	: 1.25
Tolerance mm	: ± 0.25
Rated speed rpm	: 1108
guide sleeve travel mm	: 9.65
Tolerance mm	: ± 0.25
Rated speed rpm	: 453
guide sleeve travel mm	: 2.55
Tolerance mm	: ± 0.25
Rated speed rpm	: 770
guide sleeve travel mm	: 4.95
Tolerance mm	: ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm	: 1170
Rack travel in mm	: 12.80
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 239.0
cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 106.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 11.90
Rated speed rpm	: 1085
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1160
Tolerance 1/min	: ± 15
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1300

LOW IDLE

control lever position degree	: 72.0
tolerance degree	: ± 4.0

Testing:

Rated speed rpm	: 350
rack travel mm	: 4.60
Tolerance mm	: ± 0.10

Rated speed rpm	: 250
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CRT mm min. : > 7.80

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 10.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 250
Rated speed rpm : 500
rack travel mm : 0.35
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.30
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050

F04

Del. quantity
cm³/1000 strokes : 224.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 168.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.90
Rated speed rpm : 1085
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.10.96
Test oil : ISO 4113

Combination No. : 0 402 676 830

Injection pump
Pump designation : PE6P120A320LS7894
EP type number : 0 412 626 954

Governor
Governor design. : RSV600...1050POA642
Governor no. : 0 421 833 556

Cust. part No. : 0270746002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 441 LA
Power KW : 285.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-45-120-165-240
: -285
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 251.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 4.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 251.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 83.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 600
rack travel mm : 4.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1000

rack travel mm : 14.35
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 291.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 290.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.08.96
Test oil : ISO 4113

Combination No. : 0 402 736 891

Injection pump
Pump designation : PES6P120A120RS7314
EP type number : 0 412 726 901

Governor
Governor design. : RQV400...1250PA964
: -33K
Governor no. : 0 421 815 487

Cust. part No. : 3282608

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 15.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 160.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 6.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.85
Tolerance mm : \pm 0.20

Rated speed rpm : 1315
guide sleeve
travel mm : 9.98
Tolerance mm : \pm 0.15

Rated speed rpm : 935
guide sleeve
travel mm : 6.85
Tolerance mm : \pm 0.25

Rated speed rpm : 600
guide sleeve
travel mm : 4.13
Tolerance mm : \pm 0.25

Rated speed rpm : 1610
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1400

Rack travel in mm : 14.30
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 160.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 300
CRT mm min. : > 8.00
Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 15.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 12.90
Tolerance mm : \pm 0.15

Rated speed rpm : 400
rack travel mm : 12.50
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1500
rack travel mm : 15.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1250

Pressure hPa : 275
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Pressure hPa : 485
rack travel mm : 13.80
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 270
Rated speed rpm : < 340

Check
speed 1/min : > 250
Check
speed 1/min : < 360

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 146.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 215.0

cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 20.0
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 5.0
Speed
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump
Pump designation : PES6P120A32ORS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ300/1050PA999-7
Governor no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIHRO62045 A41
Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 4.70
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.25
Tolerance mm : + 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.30
Tolerance mm : + 0.05

BASIC SETTING

Rated speed rpm : 600

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 192.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -5.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 37.0
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.75
Tolerance mm : \pm 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 6.55
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 594
guide sleeve
travel mm : 5.11
Tolerance mm : \pm 0.10

Rated speed rpm : 720

guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1380
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 192.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 15

rack travel mm : -8.30
Rated speed rpm : 1260
Tolerance 1/min : \pm 5

rack travel mm : -11.80
Tolerance mm : \pm 0.50
Rated speed rpm : 1375

LOW IDLE

control lever
position degree : 255.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.90
Tolerance mm : \pm 0.10

rack travel mm : -10.30
Rated speed rpm : 520
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ -4.00

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.35
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : -0.45
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -0.85
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 199.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 151.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1130
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 37.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
cm³/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.10.96

Test oil : ISO 4113

Combination No. : 0 402 746 608

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governer design. : RQ275/1050PA1275

Governer no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer spec. information

Customer : RENAULT V.I.

Motor : MIDR062045 F/C41

Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 220

Tolerance l/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.70

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.25

Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.45

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 11.70

Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1050

Del. quantity
cm³/1000 strokes : 176.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 30.0
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.44
Tolerance mm : \pm 0.20

Rated speed rpm : 1122
guide sleeve
travel mm : 7.06
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.70
Tolerance mm : \pm 0.10

Rated speed rpm : 648

guide sleeve
travel mm : 6.18
Tolerance mm : \pm 0.10

Rated speed rpm : 375
guide sleeve
travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

Rated speed rpm : 873
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 176.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1115

Tolerance 1/min : + 5
 rack travel mm : -7.70
 Rated speed rpm : 1205
 Tolerance 1/min : + 15
 rack travel mm : -11.20
 Tolerance mm : + 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 256.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
 rack travel mm : -5.40
 Tolerance mm : + 0.10

rack travel mm : -9.60
 Rated speed rpm : 375
 Tolerance 1/min : + 20

Rated speed rpm : 200
 CRT mm min. : < -3.50

TORQUE CONTROL

Rated speed rpm : 1050
 Rated speed rpm : 600
 rack travel mm : 1.10
 Tolerance mm : + 0.10

Rated speed rpm : 800
 rack travel mm : 0.70
 Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 1.20
 Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : -0.60
 Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 280
 rack travel mm : 0.65
 Tolerance mm : + 0.15

Pressure hPa : 160
 rack travel mm : -0.15
 Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 195

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 195.0
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 151.0
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
 Rated speed rpm : 1115
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 155.0
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 30.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 5.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 649

Injection pump
Pump designation : PES6P120A32ORS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ275/1050PA1217
Governor no. : 0 421 801 782

Cust. part No. : CCEP5150A 66
: -225/228

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR062045 I-B41
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 220
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

F21

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.95
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.40

Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 186.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.20

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0

cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275

guide sleeve

travel mm : 1.37

Tolerance mm : \pm 0.10

Rated speed rpm : 1137

guide sleeve

travel mm : 6.37

Tolerance mm : \pm 0.10

Rated speed rpm : 1050

guide sleeve

travel mm : 6.00

Tolerance mm : \pm 0.10

Rated speed rpm : 391

guide sleeve

travel mm : 4.37

Tolerance mm : \pm 0.10

Rated speed rpm : 490

guide sleeve

travel mm : 6.00

Tolerance mm : \pm 0.10

Rated speed rpm : 1340

guide sleeve

travel mm : 11.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00

Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600

Aneroid pressure

hPa : 1000

Del. quantity

cm³/1000 strokes : 186.0

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Spreed

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 274.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00

Rated speed rpm : 1120

Tolerance 1/min : \pm 5

rack travel mm : -8.40

Rated speed rpm : 1235

Tolerance 1/min : \pm 15

rack travel mm : -11.90

Tolerance mm : \pm 0.50

Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -6.20
Tolerance mm : \pm 0.10

rack travel mm : -10.50
Rated speed rpm : 385
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $<$ -5.00

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : -0.45
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -1.20
Tolerance mm : \pm 0.05

START CUT-OUT

F23

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 191.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 165.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 31.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.10.96
Test oil : ISO 4113

Combination No. : 0 402 946 028

Injection pump
Pump designation : PES6P120A320RS8047
EP type number : 0 412 926 029

Governor
Governor design. : RQV275...1175PA1312
: -1K
Governor no. : 0 421 815 965

Cust. part No. : CCEP 5161 66-245

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 060226 M71
Power KW : 158.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

F25

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.70
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference
betw. rack trav.
mm : 21.00
and maximum rack
travel : 19.50

Difference * CS : 3.00

CRT ZERO POSITION

Rack travel in mm : 13.30
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1175

Del. quantity
cm³/1000 strokes : 269.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 40.0
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.98
Tolerance mm : \pm 0.20

Rated speed rpm : 1270
guide sleeve
travel mm : 9.30
Tolerance mm : \pm 0.15

Rated speed rpm : 893
guide sleeve
travel mm : 6.60
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1420

Rack travel in mm : 12.20
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 269.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 294.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

rack travel mm : -9.20
Rated speed rpm : 1431
Tolerance 1/min : \pm 5

rack travel mm : -12.85
Tolerance mm : \pm 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 243.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $>$ -6.50
Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1175
Rated speed rpm : 650
rack travel mm : -1.75
Tolerance mm : \pm 0.10
Rated speed rpm : 350
rack travel mm : -3.00
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1175
Pressure hPa : 1600

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -5.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1175
Pressure hPa : 320
rack travel mm : -4.00
Tolerance mm : \pm 0.20

Pressure hPa : 560

F27

rack travel mm : -2.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 175
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 155
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 254.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 142.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1255
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 87.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 275

Del. quantity
cm³/1000 strokes : 40.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.96
Test oil : ISO 4113

Combination No. : 0 401 856 160

Injection pump
Pump designation : PE6P110A721RS369
EP type number : 0 411 816 121

Governor
Governor design. : RQV250...1100PA1138
Governor no. : 0 421 814 090

Cust. part No. :

Customer-spec. information
Customer : HAEP
Motor : H61.G05
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

G01

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Speed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 250

Rack travel in mm : 9.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.0
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 6.0

Speed
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000s. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.40
Tolerance mm : + 0.15

Rated speed rpm : 1157
guide sleeve
travel mm : 8.43
Tolerance mm : + 0.20

Rated speed rpm : 765
guide sleeve
travel mm : 5.41
Tolerance mm : + 0.25

Rated speed rpm : 316
guide sleeve
travel mm : 2.13
Tolerance mm : + 0.25

Rated speed rpm : 366
guide sleeve
travel mm : 2.66
Tolerance mm : + 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.24
Tolerance mm : + 0.25

Rated speed rpm : 1430
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1225

Rack travel in mm : 12.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 126.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Speed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : + 4.0

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 81.0
tolerance degree : \pm 4.0

control lever
position degree : 22.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 12.00

Rated speed rpm : 270

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 890
rack travel mm : 14.40
Tolerance mm : \pm 0.10

Rated speed rpm : 995
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.65
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 265
rack travel mm : 13.10
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 14.20
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 133.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 99.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.20
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 125.0
cm³/1000 strokes : \pm 10.0

Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 21.0
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.96
Test oil : ISO 4113

Combination No. : 0 401 876 777

Injection pump
Pump designation : PE6P120B320RS3261
EP type number : 0 411 826 821

Governor
Governor design. : RSV250...1100POA655
Governor no. : 0 421 833 573

Cust. part No. : 3826513 P01 v.10.96

Customer-spec. information
Customer : PENTA
Motor : TAMD 102 A
Power KW : 294.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration
damper
(RoBo diaphragm) : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 8.10
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 260.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 6.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 260.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 44.0
tolerance degree : ± 4.0

control lever
position degree : 94.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1220

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

control lever
position degree : 19.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 6.50
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 3.60
Tolerance mm : \pm 0.10

Pressure hPa : 140
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 140.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00

Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 23.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.96
Test oil : ISO 4113
Combination No. : 0 402 646 651
Injection pump
Pump designation : PE6P120A320LS7357
EP type number : 0 412 626 934
Governor
Governor design. : RQV325...975PA1190K
Governor no. : 0 421 815 450

Cust. part No. :

Customer-spec. information
Customer : LIAZ
Motor : M640T
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

G08

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 725

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 267.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 4.10
Tolerance mm : + 0.30

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.43
Tolerance mm : + 0.15

Rated speed rpm : 1033
guide sleeve
travel mm : 10.20
Tolerance mm : + 0.20

Rated speed rpm : 620
guide sleeve
travel mm : 5.01
Tolerance mm : + 0.25

Rated speed rpm : 370
guide sleeve
travel mm : 2.00
Tolerance mm : + 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 2.64
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.02
Tolerance mm : + 0.25

Rated speed rpm : 1141
guide sleeve
travel mm : 12.00
Tolerance mm : + 0.25

Rated speed rpm : 1240
guide sleeve
travel mm : 13.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1070

Rack travel in mm : 14.10
Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 725
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 267.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 70.0
tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.10
Rated speed rpm : 1020
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.10
Tolerance mm : \pm 0.30

Rated speed rpm : 225

CRT mm min. : $>$ 5.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 725
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 975
rack travel mm : 15.15
Tolerance mm : \pm 0.20

Rated speed rpm : 600
rack travel mm : 13.10
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1500
rack travel mm : 15.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 975
rack travel mm : 9.40
Tolerance mm : \pm 0.10

Rated speed rpm : 975

Pressure hPa : 320
rack travel mm : 11.00
Tolerance mm : \pm 0.25

Pressure hPa : 590
rack travel mm : 13.50
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 245

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 265

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 975
Del. quantity
cm³/1000 strokes : 262.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 141.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.10
Rated speed rpm : 1020
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 300.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.10.96
Test oil : ISO 4113

Combination No. : 0 402 646 744AC

Injection pump
Pump designation : PE6P120A320LS7872
EP type number : 0 412 626 912

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

Customer-spec. information
Customer : KHD
Motor : BF6M1015C
Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 195
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.20
Tolerance mm : ± 0.05

Del. quantity cm3/1000 strokes	: 275.0
cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 9.0
Rated speed rpm	: 300

Rack travel in mm	: 4.60
Tolerance mm	: ± 0.10
Del. quantity cm3/1000 strokes	: 23.0
cm3/1000 strokes	: ± 3.0
Check tolerance cm3/1000S.	: ± 6.0
Spreed cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.24
Tolerance mm	: ± 0.20

Rated speed rpm	: 1098
guide sleeve travel mm	: 10.02
Tolerance mm	: ± 0.15

Rated speed rpm	: 860
guide sleeve travel mm	: 5.59
Tolerance mm	: ± 0.25

Rated speed rpm	: 560
guide sleeve travel mm	: 3.24
Tolerance mm	: ± 0.25

Rated speed rpm	: 1154
guide sleeve travel mm	: 12.00

Tolerance mm	: ± 0.25
Rated speed rpm	: 1230
guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1130
Rack travel in mm	: 12.70
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure hPa	: 1000
Del. quantity cm3/1000 strokes	: 275.0
cm3/1000 strokes	: ± 1.0
Check tolerance cm3/1000S.	: ± 4.0
Spreed cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 122.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.20
Rated speed rpm	: 1085
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1118
Tolerance 1/min	: ± 15

rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1280

LOW IDLE

control lever position degree	: 75.0
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tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm min. : > 6.10
Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.20
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 11.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 8.10
Tolerance mm : + 0.20

Rated speed rpm : 400

Pressure hPa : 400
rack travel mm : 9.70
Tolerance mm : + 0.10

Pressure hPa : 600
rack travel mm : 10.80
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 230.0

cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1085
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.10
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 135.0
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000S. : + 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 23.0
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0
Speed
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.96
Test oil : ISO 4113

Combination No. : 0 402 646 992

Injection pump
Pump designation : PE6P120A720RS7021
EP type number : 0 412 626 869

Governor
Governor design. : RQ200/1000PA1036
Governor no. : 0 421 801 649

Cust. part No. : 1363610

Customer-spec. information
Customer : SCANIA
Motor : DSI11E01

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.45

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 258.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.08
Tolerance mm : \pm 0.10

Rated speed rpm : 1054
guide sleeve
travel mm : 4.39
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 353
guide sleeve
travel mm : 3.46
Tolerance mm : \pm 0.10

Rated speed rpm : 420

guide sleeve
travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 258.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 43.0
tolerance degree : \pm 4.0

control lever
position degree : 98.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 6.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 350
Tolerance 1/min : \pm 30

Rated speed rpm : 150
CRT mm min. : $>$ 8.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 235

rack travel mm : 13.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 227.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 268.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 230.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 31.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.02.96
Test oil : ISO 4113

Combination No. : 0 402 744 803

Injection pump
Pump designation : PES4P120A320RS7312
: -1
EP type number : 0 412 724 803

Governor
Governor design. : RQV400...1200PA1131
: -1
Governor no. : 0 421 814 154

Cust. part No. : 51.11103-7470

Customer-spec. information

Customer : MAN
Motor : D0824 LFL 06
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 73.0

cm³/1000 strokes : + 5.0

Check tolerance
cm³/1000S. : + 8.0

Spreed

cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 1000

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 206.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 40.0
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.57
Tolerance mm : + 0.20

Rated speed rpm : 1261

guide sleeve
travel mm : 10.15
Tolerance mm : + 0.15

Rated speed rpm : 836
guide sleeve
travel mm : 5.76
Tolerance mm : + 0.25

Rated speed rpm : 458
guide sleeve
travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 508
guide sleeve
travel mm : 3.10
Tolerance mm : + 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 3.61
Tolerance mm : + 0.25

Rated speed rpm : 1490
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 12.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 206.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 301.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : \pm 8

rack travel mm : 4.00
Rated speed rpm : 1340
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1480

LOW IDLE

control lever
position degree : 258.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 300

CRT mm min. : $>$ 7.60

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 140
rack travel mm : 8.55
Tolerance mm : \pm 0.15

Pressure hPa : 500
rack travel mm : 12.10
Tolerance mm : \pm 0.25

START CUT-OUT

Rated speed rpm : $<$ 280
Rated speed rpm : $>$ 320

Check
speed 1/min : $<$ 260
Check
speed 1/min : $>$ 340

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 208.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 218.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.05
Rated speed rpm : 1250
Tolerance 1/min : \pm 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 206.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 40.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.10.96
Test oil : ISO 4113

Combination No. : 0 402 746 964

Injection pump
Pump designation : PES6P120A320RS7317
EP type number : 0 412 726 903

Governor
Governor design. : RQV275...1000PA1001
Governor no. : 0 421 813 931

Cust. part No. : CCEP 5111B 66-181

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 062045 E/3
Power KW : 249.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

G23

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 18.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 269.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -8.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 34.0

cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.29
Tolerance mm : ± 0.10

Rated speed rpm : 1096
guide sleeve
travel mm : 8.56
Tolerance mm : ± 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 6.11
Tolerance mm : ± 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33

Tolerance mm : ± 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : ± 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : ± 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1165

Rack travel in mm : 12.90
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 269.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 303.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : ± 5

rack travel mm : -9.90
Rated speed rpm : 1220
Tolerance 1/min : ± 15

rack travel mm : -13.40

Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -6.60
Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10
Rated speed rpm : 600
rack travel mm : -5.50

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -4.10
Tolerance mm : \pm 0.30

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : -3.60
Tolerance mm : \pm 0.15

Pressure hPa : 560
rack travel mm : -0.75

Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 225

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 248.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 109.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 34.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.96
Test oil : ISO 4113
Combination No. : 0 402 748 812
Injection pump
Pump designation : PES8P120A720LS7425
EP type number : 0 412 728 814
Governor
Governor design. : RQV350...1200PA1310K
Governor no. : 0 421 815 541

Cust. part No. : CCEP 5164 66-136

Customer spec. information
Customer : RENAULT V.I.
Motor : MACK E9-750
Power KW : 552.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

G27

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 2- 7- 8- 4
 : - 5- 6- 3

Phasing : 0-45-90-135-180
 : -225-270-315

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 10.00
Difference ° CS : 4.25

CRT ZERO POSITION

Rack travel in mm : 13.30
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 305.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : -6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 53.0

cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1255
guide sleeve
travel mm : 9.50
Tolerance mm : \pm 0.15

Rated speed rpm : 833
guide sleeve
travel mm : 5.90
Tolerance mm : \pm 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.27
Tolerance mm : \pm 0.25

Rated speed rpm : 1570
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1408

Rack travel in mm : 12.30
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 305.0

cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

rack travel mm : -9.30
Rated speed rpm : 1370
Tolerance 1/min : \pm 15

rack travel mm : -12.75
Tolerance mm : \pm 0.55
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : -6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 225

CRT mm max. : $<$ -4.20

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 900
rack travel mm : -0.65
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : -1.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1200

Pressure hPa : 640
rack travel mm : -2.60
Tolerance mm : \pm 0.20

Pressure hPa : 950
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 120
Rated speed rpm : $<$ 230

Check
speed 1/min : $>$ 100
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 293.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 188.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1250
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Del. quantity
cm³/1000 strokes : 360.0
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325

Del. quantity
cm³/1000 strokes : 53.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.10.96
Test oil : ISO 4113

Combination No. : 0 402 848 300

Injection pump
Pump designation : PE8P120A520LS8518
EP type number : 0 412 828 201

Governor
Governor design. : RQV300...1150PA1323K
Governor no. : 0 421 815 963

Cust. part No. : 51.11103-7492

Customer-spec. information

Customer : MAN
Motor : D 2848 LE 403
Power kW : 588.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 170
Tolerance l/h : ± 15.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 580 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 335.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 49.0
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 8.0
Spread
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.61
Tolerance mm : + 0.20

Rated speed rpm : 1206
guide sleeve
travel mm : 9.84
Tolerance mm : + 0.15

Rated speed rpm : 797
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.78
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1323

Rack travel in mm : 13.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 335.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1320
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1475

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 7.39

Rated speed rpm : 332

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 11.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 7.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 2000
rack travel mm : 14.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150
rack travel mm : 7.80
Tolerance mm : \pm 0.15

Rated speed rpm : 1150

Pressure hPa : 330
rack travel mm : 8.10
Tolerance mm : \pm 0.05

Pressure hPa : 1100
rack travel mm : 12.20
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 170
Rated speed rpm : $<$ 230

Check
speed 1/min : $>$ 150
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 315.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 290.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 279.0
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1
cm³/1000 strokes : \pm 0.1
Check tolerance
cm³/1000S. : \pm 0.1

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 175.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1195
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 49.0
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 8.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.10.96
Test oil : ISO 4113

Combination No. : 0 402 899 301

Injection pump
Pump designation : PE10P120A520LS8523
EP type number : 0 412 829 202

Governor
Governor design. : RE30
Governor no. : 0 421 890 040

Cust. part No. : 51.11103-7531

Customer-spec. information
Customer : MAN
Motor : D 2840 LE 403
Power KW : 772.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 10- 9- 4- 1- 8
: - 7- 6- 3- 5
: - 2

Phasing : 0-45-72-117-144
: -189-216-261-288
: -333

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 10

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min⁻¹: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min⁻¹: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1150
Uact V : 3.360
Del. quantity
cm³/1000 strokes : 332.0
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Uact V : 2.180
Del. quantity
cm³/1000 strokes : 177.0
cm³/1000 strokes : +/- 5.0
Check tolerance
cm³/1000S. : +/- 9.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500
Uact V : 1.940
Del. quantity
cm³/1000 strokes : 0.1
cm³/1000 strokes : +/- 0.1
Check tolerance
cm³/1000S. : +/- 0.1

Rated speed rpm : 500
Uact V : 2.160
Del. quantity
cm3/1000 strokes : 165.0
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 15.0

TEST POINT L1

Rated speed rpm : 300
Uact V : 1.580
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.080
Del. quantity
cm3/1000 strokes : 24.0
cm3/1000 strokes : \pm 3.0
Spreed
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.10.96
Test oil : ISO 4113

Combination No. : 0 403 446 217

Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138

Governor
Governor design. : RQV300...1300MW48-9
Governor no. : 0 420 083 176

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 78.0

cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
cm3/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.90

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 11.0

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Speed

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1440

guide sleeve

travel mm : 9.50

Tolerance mm : ± 0.20

Rated speed rpm : 300

guide sleeve

travel mm : 1.40

Tolerance mm : ± 0.20

Rated speed rpm : 1350

guide sleeve

travel mm : 8.70

Tolerance mm : ± 0.10

Rated speed rpm : 500

guide sleeve

travel mm : 3.00

Tolerance mm : ± 0.30

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 78.0

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 100.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00

Rated speed rpm : 1345

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1440

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever

position degree : 70.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.90

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 11.05

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 11.95

Tolerance mm : + 0.15
Rated speed rpm : 585
rack travel mm : 12.10
Tolerance mm : + 0.10

Rated speed rpm : 1100
rack travel mm : 11.10
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 230

Check
speed 1/min : > 80
Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 75.0
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585
Del. quantity
cm³/1000 strokes : 69.0
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

H12

Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.11.96
Test oil : ISO 4113

Combination No. : 9 400 083 422

Injection pump
Pump designation : PES3A80D320/3RS1264
EP type number : 9 400 083 053

Governor
Governor design. : RSV350...1200A2C627R
Governor no. : 9 420 083 288

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D225-3

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

H13

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 51.0
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.0

Speed
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 9.0

cm³/1000 strokes : ± 1.5

Check tolerance

cm³/1000S. : ± 3.5

Spreed

cm³/1000 strokes : 4.0

Check tolerance

cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring

pre-tension

click setting x : 4.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 51.0

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.0

Spreed

cm³/1000 strokes : 2.5

Check tolerance

cm³/1000S. : 4.0

CONTROL LEVER

control lever

position degree : 50.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.40

Rated speed rpm : 1245

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1300

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1400

LOW IDLE

control lever

position degree : 20.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 5.50

Testing:

Rated speed rpm : 350

rack travel mm : 6.00

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 520

Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 9.45

Tolerance mm : ± 0.05

Rated speed rpm : 500

rack travel mm : 9.50

Tolerance mm : ± 0.10

Rated speed rpm : 400

rack travel mm : 10.90

Tolerance mm : ± 0.30

BREAKAWAY

Rack travel in mm : 8.40
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.11.96

Test oil : ISO 4113

Combination No. : 9 400 083 426

Injection pump

Pump designation : PES4A80D320/3RS1265

EP type number : 9 400 083 055

Governor

Governor design. : RSV350...1200A2C627R

Governor no. : 9 420 083 288

Cust. part No. :

Customer spec. information

Customer : MWM

Motor : D225-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

H16

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Beginning of delivery difference

and maximum rack

travel : 10.50

Tolerance mm : ± 1.50

Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 9.45

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 51.0

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000s. : ± 2.0

Speed

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 51.0
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.40
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 9.45
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 10.90
Tolerance mm : ± 0.30

BREAKAWAY

Rack travel in mm : 8.40
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Speed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.11.96
Test oil : ISO 4113
Combination No. : 9 400 083 456
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...900A7C2209
: -2R
Governor no. : 9 420 083 237
Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6 C 8.3 L
Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 101.5

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed	
cm ³ /1000 strokes :	3.5

Check tolerance	
cm ³ /1000S. :	8.0

Rated speed rpm :	400
-------------------	-----

Rack travel in mm :	6.00
Tolerance mm :	+ 0.10

Del. quantity	
cm ³ /1000 strokes :	18.5
cm ³ /1000 strokes :	+ 2.0

Check tolerance	
cm ³ /1000S. :	+ 4.5

Speed	
cm ³ /1000 strokes :	5.5

Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
-------------------	-----

Rack travel in mm :	0.65
Tolerance mm :	+ 0.35

governor spring	
pre-tension	
click setting x :	5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
-------------------	-----

Aneroid pressure	
hPa :	-

Del. quantity	
cm ³ /1000 strokes :	101.5
cm ³ /1000 strokes :	+ 1.0

Check tolerance	
cm ³ /1000S. :	+ 3.0

Speed	
cm ³ /1000 strokes :	3.5

Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	57.0
tolerance degree :	+ 4.0

control lever	
position degree :	107.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.20
Rated speed rpm :	948
Tolerance 1/min :	+ 3

rack travel mm :	4.00
Rated speed rpm :	975
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1100

LOW IDLE

control lever	
position degree :	77.0
tolerance degree :	+ 4.0

control lever	
position degree :	27.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	5.50

Testing:

Rated speed rpm :	400
rack travel mm :	6.00
Tolerance mm :	+ 0.10

rack travel mm :	2.00
Rated speed rpm :	440
Tolerance 1/min :	+ 30

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 19.00
---------------	---------

TORQUE CONTROL

Rated speed rpm :	900
rack travel mm :	11.25

Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.50
Tolerance mm : \pm 0.30

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 948
Tolerance 1/min : \pm 3

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 18.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.11.96

Test oil : ISO 4113

Combination No. : 9 400 083 460

Injection pump

Pump designation : PES6A100D320/3RS2827

EP type number : 9 400 084 030

Governor

Governor design. : RQV350...1200AB1267R

Governor no. : 9 420 080 319

Cust. part No. :

Customer-spec. information

Customer : CUMMINS

Motor : 6 CTAA-8.3L

Power KW : 179.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.75

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack

travel : 10.50

Tolerance mm : ± 1.50

Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.45

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 130.0

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1250
guide sleeve
travel mm : 8.90
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 6.15
Tolerance mm : ± 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.65
Tolerance mm : ± 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.25
Tolerance mm : ± 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 9.85
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 16.50

H23

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 130.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : ± 4.0

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1320
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 69.0
tolerance degree : ± 4.0

control lever
position degree : 13.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350

rack travel mm : 4.80
 Tolerance mm : + 0.10
 Rated speed rpm : 100
 CRT mm min. : > 8.50
 Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 11.45
 Tolerance mm : + 0.05
 Rated speed rpm : 750
 rack travel mm : 12.05
 Tolerance mm : + 0.05
 Rated speed rpm : 1100
 rack travel mm : 12.05
 Tolerance mm : + 0.05
 Rated speed rpm : 1150
 rack travel mm : 11.75
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 12.05
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 Rated speed rpm : 500
 Pressure hPa : 590
 rack travel mm : 1.70
 Tolerance mm : + 0.10
 Pressure hPa : 370
 rack travel mm : 0.45
 Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 270

H24

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 121.5
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 135.5
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 103.0
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.40
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 173.0
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 243

Injection pump
Pump designation : PES4A80D320RS1282-1
EP type number : 9 400 083 097

Governor
Governor design. : RS350/1500A2C2073
: -2R
Governor no. : 9 420 083 269

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D 229-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 9.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 58.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 6.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 3.5

Speed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 58.5
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0

Speed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.20
Rated speed rpm : 1585
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1640
Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1800

LOW IDLE

control lever
position degree : 60.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : ± 0.10

rack travel mm : 4.00
Rated speed rpm : 460
Tolerance 1/min : ± 30

Rated speed rpm : 250

CRT mm min. : > 6.80

Rated speed rpm : 550

CRT mm max. : < 3.20

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 9.25
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 10.65
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 10.30
Tolerance mm : ± 0.10

Rated speed rpm : 1200
rack travel mm : 9.65
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 59.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 64.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 8.20
Rated speed rpm : 1585
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350

Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 255

Injection pump
Pump designation : PES5A80D410RS2526
EP type number : 9 400 093 007

Governor
Governor design. : RS325/1400A0C2212L
Governor no. : 9 420 083 295

Cust. part No. :

Customer-spec. information
Customer : DEUTZ-ARGENTINA
Motor : F5L913

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

J01

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 66.0
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 8.50

Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 11.0
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 3.5
 Spreed
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 66.0
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.0
 Spreed
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.50
 Rated speed rpm : 1445
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1515

Tolerance 1/min : + 15
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
 rack travel mm : 8.50
 Tolerance mm : + 0.10
 rack travel mm : 6.00
 Rated speed rpm : 420
 Tolerance 1/min : + 30
 Rated speed rpm : 280
 CRT mm min. : > 8.80
 Rated speed rpm : 550
 CRT mm max. : < 4.40

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 11.55
 Tolerance mm : + 0.05
 Rated speed rpm : 500
 rack travel mm : 12.25
 Tolerance mm : + 0.05
 Rated speed rpm : 1100
 rack travel mm : 11.95
 Tolerance mm : + 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 56.5
 cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000s. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 63.0
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000s. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 7.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1445
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000s. : + 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil :
Combination No. : 9 400 085 267
Injection pump
Pump designation : PES6A95D410RS2751
EP type number : 9 400 084 013
Governor
Governor design. : RSV650...1250A8C2231
: -1L
Governor no. : 9 420 083 230
Cust. part No. :

Customer-spec. information

Customer : FORD
Motor : 6,6 L TC
Power KW : 112.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 017
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

J04

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference * CS : 6.50

BASIC SETTING

Rated speed rpm : 1220
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 92.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spreed	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	8.0
Rated speed rpm :	650
Rack travel in mm :	6.80
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	9.0
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spreed	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S. :	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
governor spring	
pre-tension	
click setting x :	3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1220
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	92.0
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spreed	
cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	101.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.90
Rated speed rpm :	1268
Tolerance 1/min :	+ 3
rack travel mm :	4.00
Rated speed rpm :	1303
Tolerance 1/min :	+ 3
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1420

LOW IDLE

control lever	
position degree :	76.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	650
rack travel mm :	6.30

Testing:

Rated speed rpm :	650
rack travel mm :	6.80
Tolerance mm :	+ 0.10
rack travel mm :	2.00
Rated speed rpm :	760
Tolerance 1/min :	+ 30
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1220
rack travel mm :	11.95
Tolerance mm :	+ 0.05
Rated speed rpm :	800
rack travel mm :	11.95
Tolerance mm :	+ 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 79.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1268
Tolerance 1/min : ± 3

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 160.0
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000S. : ± 11.0

LOW IDLE

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 9.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 270

Injection pump
Pump designation : PES6A90D320RS2718
EP type number : 9 400 084 003

Governor
Governor design. : RSV350...1400A2C2215
: -1R
Governor no. : 9 420 083 231

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D229/6

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 62.0

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 62.0
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.50
Rated speed rpm : 1445
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1490
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 25.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.15
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 8.95

Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 65.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 7.50
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 286
Injection pump
Pump designation : PES6A90D320RS2701
EP type number : 9 400 083 094
Governor
Governor design. : RSV350...1150A2C2097
: -2R
Governor no. : 9 420 083 224

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D 229-6
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 62.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000s. : ± 2.5

Spreed	
cm3/1000 strokes :	3.0
Check tolerance	
cm3/1000S. :	7.0
Rated speed rpm :	350
Rack travel in mm :	6.00
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	12.5
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
cm3/1000 strokes :	4.5
Check tolerance	
cm3/1000S. :	7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	800
Rack travel in mm :	0.65
Tolerance mm :	+ 0.35
governor spring	
pre-tension	
click setting x :	4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1150
Aneroid pressure	
hPa :	-
Del. quantity	
cm3/1000 strokes :	62.5
cm3/1000 strokes :	+ 0.5
Check tolerance	
cm3/1000S. :	+ 2.5
Spreed	
cm3/1000 strokes :	3.0
Check tolerance	
cm3/1000S. :	7.0

CONTROL LEVER

control lever	
position degree :	46.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	8.20
Rated speed rpm :	1195
Tolerance 1/min :	+ 5
rack travel mm :	4.00
Rated speed rpm :	1245
Tolerance 1/min :	+ 15
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1400

LOW IDLE

control lever	
position degree :	20.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	350
rack travel mm :	5.50

Testing:

Rated speed rpm :	350
rack travel mm :	6.00
Tolerance mm :	+ 0.10
rack travel mm :	2.00
Rated speed rpm :	600
Tolerance 1/min :	+ 30
Rated speed rpm :	100
CRT mm min. :	> 19.00

TORQUE CONTROL

Rated speed rpm :	1150
rack travel mm :	9.25
Tolerance mm :	+ 0.05
Rated speed rpm :	500
rack travel mm :	9.85
Tolerance mm :	+ 0.05
Rated speed rpm :	800
rack travel mm :	9.55

Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 60.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 8.20
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 12.5
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 301
Injection pump
Pump designation : PES6A85D410RS2415
EP type number : 0 410 886 907
Governor
Governor design. : RQV350...1325AB1234
: -1L
Governor no. : 9 420 080 259
Cust. part No. :

Customer-spec. information
Customer : DEUTZ-ARGENTINA
Motor : BF 6L 913
Power KW : 116.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 32.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1325

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 77.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1400
guide sleeve
travel mm : 8.90
Tolerance mm : \pm 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 4.95
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.75
Tolerance mm : \pm 0.25

Rated speed rpm : 600
guide sleeve
travel mm : 2.85
Tolerance mm : \pm 0.25

Rated speed rpm : 1200
guide sleeve
travel mm : 6.95
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1325

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 77.5
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

control lever
position degree : 116.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1370
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1470
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1325
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : \pm 0.15

Rated speed rpm : 1100
rack travel mm : 11.60
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 300

Check
speed 1/min : > 80
Check
speed 1/min : < 320

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 79.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 77.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1370
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 16.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 11.11.96

Test oil : ISO 4113

Combination No. : 9 400 085 311

Injection pump

Pump designation : PES6A90D320RS2718

EP type number : 9 400 084 003

Governor

Governor design. : RSV350...1250A0C1108

: -2R

Governor no. : 9 420 083 272

Cust. part No. :

Customer-spec. information

Customer : MWM

Motor : TD 229 EC-06

Power KW : 121.5

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 0 681 343 009

Opening pressure bar

: 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.75

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50

Tolerance mm : ± 1.50

Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.85

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 89.0

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.5

Spread
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 350

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 11.0
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.0

Spread
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 89.0
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000S. : + 2.5

Spread
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 79.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.70

Testing:

Rated speed rpm : 350
rack travel mm : 5.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.85
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : + 0.10

Rated speed rpm : 400
rack travel mm : 12.30

Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 350
Injection pump
Pump designation : PES6A95D41ORS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1066
: -12L
Governor no. : 9 420 080 331
Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 154.5

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 11.0

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Spread

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : \pm 0.25

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : \pm 0.05

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : \pm 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 700

Del. quantity

cm³/1000 strokes : 99.0

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Spread

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : \pm 4.0

control lever

position degree : 110.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10

Rated speed rpm : 1365

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1505

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 68.0

tolerance degree : \pm 4.0

control lever

position degree : 18.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 0.55
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : 1.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 87.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 84.0
cm³/1000 strokes : \pm 7.5

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 353
Injection pump
Pump designation : PES6A95D410RS277?
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1066
: -8L
Governor no. : 9 420 080 279
Cust. part No. :

Customer spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

J22

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 99.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 99.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1500
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 0.40
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 1.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 87.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 60.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 84.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 372
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1283L
Governor no. : 9 420 080 367

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 106.0

cm³/1000 strokes : + 0.5

Check tolerance
cm³/1000S. : + 2.5

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 106.0
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.5
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1505
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 0.40
Tolerance mm : \pm 0.10

Pressure hPa : 560
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 95.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 61.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1360
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 76.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 377

Injection pump
Pump designation : PES6A95D410RS2857
EP type number : 9 400 084 036

Governor
Governor design. : RQV300...1250AB1284L
Governor no. : 9 420 080 372

Cust. part No. :

Customer-spec. information
Customer : DEUTZ-ARGENTINA
Motor : BF 6 L 913C
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 98.5

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 5.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1250
guide sleeve
travel mm : 7.70
Tolerance mm : + 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 5.35
Tolerance mm : + 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.85
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.55
Tolerance mm : + 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 9.05
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 98.5
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1295
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 66.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 7.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.25

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 11.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 670
rack travel mm : 1.60
Tolerance mm : \pm 0.10

Pressure hPa : 550
rack travel mm : 0.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 104.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 83.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 160.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 379

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1277L
Governor no. : 9 420 080 355

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 91.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 91.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.50
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 11.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 11.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 1.20
Tolerance mm : \pm 0.10

Pressure hPa : 310
rack travel mm : 0.45
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 89.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 800
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 91.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 82.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 390
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1310L
Governor no. : 9 420 080 388

Cust. part No. : 0260746902

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 95.0

cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 95.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1530
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 9.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1125
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.60
Tolerance mm : \pm 0.10

Pressure hPa : 430
rack travel mm : 1.55
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

K09

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 88.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 90.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 93.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 391
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1310L
Governor no. : 9 420 080 388

Cust. part No. : 0260745802

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.85
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 95.0
cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 3.0
Speed cm³/1000 strokes : 3.5
Check tolerance cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.10
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 95.0
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : + 4.0

control lever
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1530
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

control lever
position degree : 21.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.10
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 9.70

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 1125
rack travel mm : 11.85
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.60
Tolerance mm : + 0.10

Pressure hPa : 430
rack travel mm : 1.55
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 88.5
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 90.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 1385
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 93.0
cm³/1000 strokes : + 7.5
Check tolerance
cm³/1000S. : + 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96

Test oil : ISO 4113

Combination No. : 9 400 085 393

Injection pump

Pump designation : PES4A95D41ORS2887

EP type number : 9 400 084 040

Governor

Governor design. : RQV300...1300AB1311L

Governor no. : 9 420 080 390

Cust. part No. : 0260746802

Customer-spec. information

Customer : MBB

Motor : OM 364 LA/EURO I

Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.45

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 99.0

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm :	8.30
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	12.0
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spread	
cm3/1000 strokes :	5.5
Check tolerance	
cm3/1000S. :	9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	300
guide sleeve	
travel mm :	1.05
Tolerance mm :	+ 0.25

Rated speed rpm :	1500
guide sleeve	
travel mm :	8.55
Tolerance mm :	+ 0.05

Rated speed rpm :	500
guide sleeve	
travel mm :	2.55
Tolerance mm :	+ 0.25

Rated speed rpm :	750
guide sleeve	
travel mm :	4.20
Tolerance mm :	+ 0.10

GUIDE SLEEVE POSITION

Rated speed rpm :	1500
-------------------	------

Rack travel in mm :	16.50
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1300
Aneroid pressure	
hPa :	700
Del. quantity	
cm3/1000 strokes :	99.0
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spread	

cm3/1000 strokes :	3.5
Check tolerance	
cm3/1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	62.0
tolerance degree :	+ 4.0

control lever	
position degree :	111.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.40
Rated speed rpm :	1345
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1515
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1640

LOW IDLE

control lever	
position degree :	73.0
tolerance degree :	+ 4.0

control lever	
position degree :	22.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	8.30
Tolerance mm :	+ 0.10

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 10.20
---------------	---------

Rated speed rpm :	415
-------------------	-----

TORQUE CONTROL

Rated speed rpm :	1300
rack travel mm :	12.45

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 0.85
Tolerance mm : \pm 0.05

Pressure hPa : 400
rack travel mm : 2.10
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 95.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 75.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 395
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1312L
Governor no. : 9 420 080 391

Cust. part No. : 0260749702

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 109.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 109.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1515
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 8.80

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1240
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 2.40
Tolerance mm : \pm 0.10

Pressure hPa : 410
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 111.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 111.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 108.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 16.5
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 396
Injection pump
Pump designation : PES6A95D41DRS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1312L
Governor no. : 9 420 080 391

Cust. part No. : 0260749602

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 109.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 109.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1515
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.80

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1240
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 2.40
Tolerance mm : \pm 0.10

Pressure hPa : 410
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200

K25

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 111.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 111.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 8.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 108.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 16.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.11.96
Test oil : ISO 4113
Combination No. : 9 400 087 477
Injection pump
Pump designation : PES6P120A720RS3256
: -2
EP type number : 9 400 087 080
Governor
Governor design. : RQV350...1300PA1098
Governor no. : 9 420 080 353
Cust. part No. : 0240747202

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 125.1

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

K27

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 141.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 7.65
Tolerance mm : \pm 0.15
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1350
guide sleeve
travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 6.45
Tolerance mm : \pm 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.25
Tolerance mm : \pm 0.25

Rated speed rpm : 650
guide sleeve
travel mm : 4.15
Tolerance mm : \pm 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 9.55
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1360
Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 141.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.70
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1440
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 7.65
Tolerance mm : \pm 0.15

Rated speed rpm : 250

CRT mm min. : $>$ 9.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.80

Tolerance mm : \pm 0.10
Rated speed rpm : 800
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 5.10
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 10.80
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 0.70
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 119.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

L01

cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 18.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 17.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

Note remarks

Edition : 11.11.96
Test oil : ISO 4113

Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029

Cust. part No. : 016 074 87 02

Customer : MBB
Motor : OM364
Power KW : 66.0

Inlet Line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure : 173.5 bar
Tolerance bar : \pm 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

```

Prestroke mm      :      2.30
Tolerance mm      :  +  0.05
Check
tolerance mm      :  +  0.10

```

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Rated speed rpm : 1400

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 63.5

$$\text{cm}^3/1000 \text{ strokes} : \pm 0.5$$

Check tolerance
cm³/1000s. : \pm 2.5

Spreed
cm³/1000 strokes : 3.0

Check tolerance
cm3/1000s. : 7.0

Rated speed rpm : 300

Rack travel in mm : 8.70
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 10.0
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 63.5
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed

cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 62.0
 tolerance degree : + 4.0

control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.90
 Rated speed rpm : 1455
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1575
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1700

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : + 4.0

control lever
 position degree : 23.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.70
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.00

Rated speed rpm : 610

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.95

Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 1150
rack travel mm : 11.70
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 59.5
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 66.0
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 3.5
Spreed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1455
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : + 7.5
Check tolerance
cm³/1000S. : + 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 307
Injection pump
Pump designation : PES4A95D410RS2774
EP type number : 9 400 084 019
Governor
Governor design. : RQV300...1300AB1228
: -1L
Governor no. : 9 420 080 268
Cust. part No. : 018 074 50 02

Customer-spec. information
Customer : MBB
Motor : OM 364 A
Power KW : 85.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

L06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.65
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 91.0

cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 10.0
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 91.0
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed

cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : + 4.0

control lever
 position degree : 108.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.60
 Rated speed rpm : 1365
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1490
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 4.0

control lever
 position degree : 19.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 10.65

Tolerance mm : \pm 0.05
Rated speed rpm : 800
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 280
rack travel mm : 0.45
Tolerance mm : \pm 0.05

Pressure hPa : 410
rack travel mm : 1.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 86.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

L08

cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 53.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 84.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 315
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1066
: -9L
Governor no. : 9 420 080 282
Cust. part No. : 019 074 51 02

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

L10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 88.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : ± 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : ± 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : ± 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 88.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 1365
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 10.95
Tolerance mm : ± 0.05

Rated speed rpm : 1000
 rack travel mm : 10.70
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 800
 rack travel mm : 10.95
 Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500

 Rated speed rpm : 500

 Pressure hPa : 300
 rack travel mm : 0.50
 Tolerance mm : \pm 0.10

 Pressure hPa : 460
 rack travel mm : 1.15
 Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 220

 Check speed 1/min : > 80
 Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 800
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 85.0
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : 800
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 87.5
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 51.0
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.40
 Rated speed rpm : 1365
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 13.70
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 85.0
 cm³/1000 strokes : \pm 7.5
 Check tolerance
 cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 11.5
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 317

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1066
: -9L
Governor no. : 9 420 080 282

Cust. part No. : 022 074 84 02

Customer-spec. information

Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.45
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 88.0

cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 88.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000

rack travel mm : 10.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 10.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 0.50
Tolerance mm : \pm 0.10

Pressure hPa : 460
rack travel mm : 1.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 85.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 800
Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 87.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 51.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.40
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 85.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113

Combination No. : 9 400 085 319

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1400AB1066
: -10L
Governor no. : 9 420 080 287

Cust. part No. : 019 074 52 02

Customer-spec. information
Customer : MBB
Motor : OM 352 A
Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 006

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.5

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 78.5
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.50
Rated speed rpm : 1465
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.55
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 9.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 10.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 170
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 330
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 75.5
cm³/1000 strokes : \pm 2.0

L20

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : 700
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 79.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 42.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 8.50
Rated speed rpm : 1465
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 80.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 329
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1256L
Governor no. : 9 420 080 297

Cust. part No. : 020 074 74 02

Customer-spec. information

Customer : MBB
Motor : OM 366 LA
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 006

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 99.0

cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 11.0
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 cm3/1000 strokes : 5.5
 Check tolerance
 cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm3/1000 strokes : 99.0
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed

cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : + 4.0

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1365
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1505
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

control lever
 position degree : 16.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.00
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 8.00

Rated speed rpm : 485

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.15

Tolerance mm : \pm 0.05
Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.55
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 10.00
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 10.65
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 87.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 60.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1365
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 84.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.11.96
Test oil : ISO 4113
Combination No. : 9 400 085 363
Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018
Governor
Governor design. : RQV300...1300AB1277L
Governor no. : 9 420 080 355

Cust. part No. : 025 074 28 02

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 91.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : \pm 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : \pm 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 91.0
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.50
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

Rated speed rpm : 325

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
 rack travel mm : 11.00
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 800
 rack travel mm : 11.45
 Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 500
 rack travel mm : 1.20
 Tolerance mm : \pm 0.10

Pressure hPa : 310
 rack travel mm : 0.45
 Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 220

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 800
 Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 89.5
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolera
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : 800
 Rated speed rpm : 1000
 Del. quantity
 cm³/1000 strokes : 91.5
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 62.0
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 9.50
 Rated speed rpm : 1350
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 13.30
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 82.5
 cm³/1000 strokes : \pm 7.5
 Check tolerance
 cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 11.0
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 cm³/1000 strokes : 5.5

Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.96
Test oil : ISO 4113
Combination No. : 0 400 836 043
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1200AB1245R
Governor no. : 0 420 213 118
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6CT83C
Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

M01

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 115.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 4.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 0.10
Tolerance mm : + 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 6.90

Rated speed rpm : 350
guide sleeve
travel mm : 1.25
Tolerance mm : + 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 2.15
Tolerance mm : + 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 8.45
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 115.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 44.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 13.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 540
Tolerance 1/min : + 30

Rated speed rpm : 100
CRT mm min. : > 9.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.80
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 290

Check
speed 1/min : > 80
Check
speed 1/min : < 300

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 161.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.96
Test oil : ISO 4113
Combination No. : 0 400 846 231
Injection pump
Pump designation : PES6A90D410RS2293
EP type number : 0 410 896 031
Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352
Power KW : 95.6

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 922 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

MO4

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 62.0
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Spreed
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.5
Rated speed rpm : 300
Rack travel in mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm3/1000 strokes : 12.0
cm3/1000 strokes : ± 3.0
Check tolerance
cm3/1000S. : ± 5.0
Spreed
cm3/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : ± 0.15

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : ± 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.95
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1420

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 62.0
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 9.10

Rated speed rpm : 445

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

BREAKAWAY

Rack travel in mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 76.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

Note remarks

Edition : 02.11.96
Test oil : ISO 4113

Injection pump
Pump designation : PES6A90D410RS2667
EP type number : 0 410 896 080

Cust. part No. :

Customer : MB-NFZ
Motor : OM 366
Power KW : 100.0

Inlet Line : 3.2

Test oil inlet		
temp. °C	:	40
Tolerance °C	:	± 2.0

Overflow valve : 1 419 922 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure : 173.5
Tolerance bar : \pm 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

MO7

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

```
Phasing          : 0-60-120-180-240
                  : -300
Tolerance        : + 0.50
Check
tolerance *NW    : + 0.75
```

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 64.0

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : \pm 2.5

Speed
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000s. : 4.5

Rated speed rpm : 300

Rack travel in mm : 9.00
Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 11.0
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1450
 guide sleeve
 travel mm : 8.45
 Tolerance mm : + 0.05

Rated speed rpm : 600
 guide sleeve
 travel mm : 3.20
 Tolerance mm : + 0.80

Rated speed rpm : 650
 guide sleeve
 travel mm : 3.95
 Tolerance mm : + 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 64.0
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spreed
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.5

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1555
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 9.00
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.30

Rated speed rpm : 610

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 11.15
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 12.30
 Tolerance mm : + 0.10

Rated speed rpm : 900
 rack travel mm : 11.95
 Tolerance mm : + 0.15

Rated speed rpm : 1100
 rack travel mm : 11.55
 Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100

Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 500

Del. quantity

cm³/1000 strokes : 53.0

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.5

Aneroid pressure

hPa : -

Rated speed rpm : 900

Del. quantity

cm³/1000 strokes : 56.5

cm³/1000 strokes : ± 1.5

Check tolerance

cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.10

Rated speed rpm : 1445

Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 17.20

Tolerance mm : ± 0.20

Del. quantity

cm³/1000 strokes : 83.0

cm³/1000 strokes : ± 5.0

Check tolerance

cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300

Del. quantity

cm³/1000 strokes : 11.0

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

cm³/1000 strokes : 2.0

Check tolerance

cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.11.96
Test oil : ISO 4113

Combination No. : 0 400 866 197

Injection pump
Pump designation : PES6A100D320/3RS2691
: -4
EP type number : 9 410 230 030

Governor
Governor design. : RSV450...1100A0C2238
: -3R
Governor no. : 0 420 233 330

Cust. part No. :

Customer spec. information
Customer : CDC
Motor : 6 CT 830
Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 120.5

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.5

Speed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000s. : 6.5

Rated speed rpm : 450

Rack travel in mm : 5.70
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 18.0
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring
 pre-tension
 click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 120.5
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.5
 Spreed
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 4.00
 Rated speed rpm : 1210

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1143
 rack travel mm : 11.15

Rated speed rpm : 1200
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1360

Rated speed rpm : 1144
 rack travel mm : 11.15

Rated speed rpm : 1201
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : \pm 0.55

Rated speed rpm : 1145
 rack travel mm : 11.15

Rated speed rpm : 1202
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : \pm 0.55

Rated speed rpm : 1146
 rack travel mm : 11.15

Rated speed rpm : 1203
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : \pm 0.55

Rated speed rpm : 1147
 rack travel mm : 11.15

Rated speed rpm : 1204
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : \pm 0.55

Rated speed rpm : 1148
 rack travel mm : 11.15

Rated speed rpm : 1205
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.20

Testing:

Rated speed rpm : 450
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 515
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.10
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

rack travel mm : 10.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 560
rack travel mm : 12.35
Tolerance mm : \pm 0.20

Pressure hPa : 385
rack travel mm : 11.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 137.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 82.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 146.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 18.0
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : +- 4.5
Speed
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.08.96
Test oil : ISO 4113
Combination No. : 0 400 844 047
Injection pump
Pump designation : PES4A90D410RS2294
EP type number : 0 410 894 011
Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 314
Power KW : 62.5

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 63.0
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Speed
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.5
Rated speed rpm : 300
Rack travel in mm : 7.30
Tolerance mm : ± 0.10
Del. quantity
cm3/1000 strokes : 12.0
cm3/1000 strokes : ± 3.0
Check tolerance
cm3/1000S. : ± 5.0
Speed
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : \pm 0.15

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : \pm 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : \pm 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.95
Tolerance mm : \pm 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1420

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.0
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Speed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.70
Rated speed rpm : 1460
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.80

Rated speed rpm : 445

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

BREAKAWAY

Rack travel in mm : 8.70
Rated speed rpm : 1460

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 76.0
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.11.96
Test oil : ISO 4113

Combination No. : 0 400 846 185

Injection pump
Pump designation : PES6A80D410RS2085Y
EP type number : 0 410 886 044

Governor
Governor design. : RQV300...1475AB533DL
Governor no. : 0 420 214 069

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 352

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1450

Rack travel in mm : 8.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 46.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 300

Rack travel in mm :	7.00
Tolerance mm :	± 0.10
Del. quantity	
cm ³ /1000 strokes :	14.5
cm ³ /1000 strokes :	± 1.5
Check tolerance	
cm ³ /1000S. :	± 3.5
Spreed	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S. :	6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	300
guide sleeve	
travel mm :	1.04
Tolerance mm :	± 0.20

Rated speed rpm :	1516
guide sleeve	
travel mm :	8.76
Tolerance mm :	± 0.15

Rated speed rpm :	997
guide sleeve	
travel mm :	5.19
Tolerance mm :	± 0.25

Rated speed rpm :	590
guide sleeve	
travel mm :	3.20
Tolerance mm :	± 0.25

Rated speed rpm :	1790
guide sleeve	
travel mm :	11.50
Tolerance mm :	± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm :	1420
-------------------	------

Rack travel in mm :	16.50
Tolerance mm :	± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1450
Aneroid pressure	
hPa :	-

Del. quantity	
cm ³ /1000 strokes :	46.5
cm ³ /1000 strokes :	± 0.5
Check tolerance	
cm ³ /1000S. :	± 2.0
Spreed	
cm ³ /1000 strokes :	2.5
Check tolerance	
cm ³ /1000S. :	4.0

CONTROL LEVER

control lever	
position degree :	114.0
tolerance degree :	± 4.0

RATED SPEED

rack travel mm :	7.20
Rated speed rpm :	1510
Tolerance 1/min :	± 5

rack travel mm :	4.00
Rated speed rpm :	1575
Tolerance 1/min :	± 15

rack travel mm :	0.50
Tolerance mm :	± 0.50
Rated speed rpm :	1700

LOW IDLE

control lever	
position degree :	69.0
tolerance degree :	± 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	7.00
Tolerance mm :	± 0.10

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 8.20
---------------	--------

Rated speed rpm :	440
-------------------	-----

TORQUE CONTROL

Rated speed rpm :	1450
rack travel mm :	8.25
Tolerance mm :	± 0.05

Rated speed rpm : 500
rack travel mm : 9.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 9.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
rack travel mm : 8.35
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

BREAKAWAY

Rack travel in mm : 7.20
Rated speed rpm : 1510
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 76.5
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 14.5
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.09.96
Test oil : ISO 4113
Combination No. : 0 400 876 218
Injection pump
Pump designation : PES6A90D410RS2293
EP type number : 0 410 896 031
Governor
Governor design. : RSV350...1400A0C1080
: L
Governor no. : 0 420 232 408

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 352
Power KW : 92.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

M20

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 9.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 63.5
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0
Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20
governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.5
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1570

rack travel mm : 4.00
Rated speed rpm : 1525

rack travel mm : 8.70
Rated speed rpm : 1450
Tolerance 1/min : + 5

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.80

Testing:

rack travel mm : 2.00
Rated speed rpm : 2775
Tolerance 1/min : + 2325

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.75
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 10.00
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 52.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 57.0
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.08.95
Test oil : ISO 4113

Combination No. : 0 400 464 105

Injection pump
Pump designation : PES4A80D320/3RS1301
EP type number : 0 410 484 016

Governor
Governor design. : RSV325...1500A2C505R
Governor no. : 0 420 233 187

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : D226-4

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet :
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 48.5

cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.0

Speed
cm3/1000 strokes : 2.5

Check tolerance
cm3/1000S. : 4.0

Rated speed rpm : 325

Rack travel in mm : 7.00
Tolerance mm : ± 0.10

Del. quantity
cm3/1000 strokes : 13.0
cm3/1000 strokes : ± 3.0

Check tolerance
cm3/1000S. : ± 4.5

Speed
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 3.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 48.5
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.0
Speed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 55.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.00
Rated speed rpm : 1525
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1560
Tolerance 1/min : \pm 15

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1720

rack travel mm : 4.00
Rated speed rpm : 1570

LOW IDLE

control lever
position degree : 16.0

M24

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 7.50

Testing:

Rated speed rpm : 325
rack travel mm : 7.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : \pm 30

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

BREAKAWAY

Rack travel in mm : 8.00
Rated speed rpm : 1525
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 100.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.96
Test oil : ISO 4113

Combination No. : 0 400 844 081

Injection pump
Pump designation : PES4A90D410RS2570
EP type number : 0 410 894 023

Governor
Governor design. : RQV300...1400AB1111
 : -3L
Governor no. : 0 420 212 159

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 314
Power KW : 57.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

M26

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 59.5

cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 300

Rack travel in mm : 8.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.30
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 59.5
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50
Rated speed rpm : 1445
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1550
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 24.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.70
Tolerance mm : + 0.10

Rated speed rpm : 605

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.55
Tolerance mm : + 0.05

Rated speed rpm : 400
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 11.10
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 5.75
Tolerance mm : + 4.85

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 45.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Check tolerance
cm³/1000S. : 5.5

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 76.0
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Speed

M28

cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.11.96
Test oil : ISO 4113
Combination No. : 0 400 844 087
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029
Governor
Governor design. : RQV300...1400AB1065
 : -5L
Governor no. : 0 420 212 169
Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM364
Power KW : 66.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

NO1

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.95
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 63.5
cm3/1000 strokes : ± 0.5
Check tolerance
cm3/1000S. : ± 2.5
Spreed
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0
Rated speed rpm : 300
Rack travel in mm : 8.70
Tolerance mm : ± 0.10
Del. quantity
cm3/1000 strokes : 10.0
cm3/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : + 0.25

Rated speed rpm : 1500
guide sleeve
travel mm : 8.55
Tolerance mm : + 0.05

Rated speed rpm : 500
guide sleeve
travel mm : 2.55
Tolerance mm : + 0.25

Rated speed rpm : 750
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 63.5
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1455
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1575
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.70
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 10.20

Rated speed rpm : 610

TORQUE CONTROL

Dimension a mm : 1.00
Rated speed rpm : 1400
rack travel mm : 10.95
Tolerance mm : + 0.05

Rated speed rpm : 630
rack travel mm : 12.25
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 630
Del. quantity
cm³/1000 strokes : 57.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 56.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1455
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.11.96
Test oil : ISO 4113
Combination No. : 0 400 844 091
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029
Governor
Governor design. : RQV300...1400AB1065
 : -12L
Governor no. : 0 420 212 207
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 61.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

N04

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 59.5

cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.5

Speed
cm3/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 8.70

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 10.0

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

cm³/1000 strokes : 4.5

Check tolerance

cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 59.5

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.5

Spread

cm³/1000 strokes : 3.0

Check tolerance

cm³/1000S. : 7.0

CONTROL LEVER

control lever

position degree : 111.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 9.50

Rated speed rpm : 1445

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1550

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1650

N05

LOW IDLE

control lever

position degree : 74.0

tolerance degree : ± 6.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 10.20

Rated speed rpm : 610

TORQUE CONTROL

Rated speed rpm : 1400

rack travel mm : 10.55

Tolerance mm : ± 0.05

Rated speed rpm : 475

rack travel mm : 11.55

Tolerance mm : ± 0.05

Rated speed rpm : 850

rack travel mm : 11.00

Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100

Rated speed rpm : < 220

Check

speed 1/min : > 80

Check

speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 475

Del. quantity

cm³/1000 strokes : 46.0

cm³/1000 strokes : ± 1.5

Check tolerance

cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 49.0
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.11.96
Test oil : ISO 4113

Combination No. : 0 400 844 099

Injection pump
Pump designation : PES4A95D410RS2837
EP type number : 0 410 894 991

Governor
Governor design. : RQV300...1400AB1065
: -29L
Governor no. : 0 420 212 247

Cust. part No. : 024 074 48 02

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

N07

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Del. quantity
 cm3/1000 strokes : 12.0
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 cm3/1000 strokes : 5.5
 Check tolerance
 cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.35
 Tolerance mm : + 0.25

Rated speed rpm : 1453
 guide sleeve
 travel mm : 8.77
 Tolerance mm : + 0.25

Rated speed rpm : 921
 guide sleeve
 travel mm : 5.42
 Tolerance mm : + 0.25

Rated speed rpm : 367
 guide sleeve
 travel mm : 2.41
 Tolerance mm : + 0.25

Rated speed rpm : 417
 guide sleeve
 travel mm : 3.01
 Tolerance mm : + 0.25

Rated speed rpm : 490
 guide sleeve
 travel mm : 3.42
 Tolerance mm : + 0.25

Rated speed rpm : 1740
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm3/1000 strokes : 72.0
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 6.0

RATED SPEED

rack travel mm : 7.85
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1520
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 300
 rack travel mm : 5.00

Testing:

Rated speed rpm : 100

CRT mm min. : > 6.50

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 8.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 8.90
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.5
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 7.85
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.11.96
Test oil : ISO 4113
Combination No. : 0 400 846 559
Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0 410 896 082
Governor
Governor design. : RQV300...1400AB1065
 : -9L
Governor no. : 0 420 212 202
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366
Power KW : 92.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : + 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

N10

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 2.30
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.35
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 59.5
cm3/1000 strokes : + 0.5
Check tolerance
cm3/1000S. : + 2.5
Speed
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 8.80
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 59.5
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1445
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1555

Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 73.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 300
rack travel mm : 8.80
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 10.30
Rated speed rpm : 655

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.35
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 11.10
Tolerance mm : + 0.10

Rated speed rpm : 1100
rack travel mm : 10.40
Tolerance mm : + 0.15

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 49.0
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

BREAKAWAY

Rack travel in mm : 9.30
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

Note remarks

Edition : 18.11.96
Test oil : ISO 4113

Injection pump
Pump designation : PES6A95D410RS2844
EP type number : 0 410 896 893

Governor
Governor design. : RQV300...1400AB1065
: -32L
Governor no. : 0 420 212 248

```
Customer-spec. information
Customer      : MB-NFZ
Motor         : OM 366
Power KW      : 95.0
```

Inlet Line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure : 173.5 bar
Tolerance bar : \pm 1.5

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 26.0
Tolerance bar : \pm 1.0

Prestroke mm	:	3.25
Tolerance mm	:	+ 0.05
Check		
tolerance mm	:	+ 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Rated speed rpm : 1400

Rack travel in mm : 9.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 67.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : \pm 3.0

Spreed
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.06
Tolerance mm : \pm 0.25

Rated speed rpm : 1452
guide sleeve
travel mm : 8.03
Tolerance mm : \pm 0.25

Rated speed rpm : 593
guide sleeve
travel mm : 3.46
Tolerance mm : \pm 0.25

Rated speed rpm : 643
guide sleeve
travel mm : 3.84
Tolerance mm : \pm 0.25

Rated speed rpm : 1030
guide sleeve
travel mm : 5.33
Tolerance mm : \pm 0.25

Rated speed rpm : 1820
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

N14

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 67.0
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Spreed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.70
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1535
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 68.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 6.50

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.70
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 88.0
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

N15

Del. quantity
cm³/1000 strokes : 10.0
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.11.96
Test oil : ISO 4113
Combination No. : 0 400 876 310
Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073
Governor
Governor design. : RSV350...1200AOC1148
: -1L
Governor no. : 0 420 232 456

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1180
Rack travel in mm : 12.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 73.5
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000s. : ± 2.5
Speed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 5.0
Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 14.0
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : + 4.0
Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20
governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1180
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 73.5
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.5
Spreed
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1460
rack travel mm : 4.00
Rated speed rpm : 1360

LOW IDLE

N17

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.50

Testing:

rack travel mm : 2.00
Rated speed rpm : 510
Tolerance 1/min : + 30
Rated speed rpm : 100
CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1180
rack travel mm : 12.15
Tolerance mm : + 0.05
Rated speed rpm : 725
rack travel mm : 13.65
Tolerance mm : + 0.05
Rated speed rpm : 900
rack travel mm : 13.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.55
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : 235
rack travel mm : 12.10
Tolerance mm : + 0.10

Pressure hPa : 450
rack travel mm : 12.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 725
Del. quantity
cm³/1000 strokes : 81.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : 900
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 76.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Check tolerance
cm³/1000S. : 5.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 14.0
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Spreed
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.11.96
Test oil : ISO 4113

Combination No. : 0 402 034 701

Injection pump
Pump designation : PES4P120B120RS3379
EP type number : 0 412 024 702

Governor
Governor design. : RQV475...1250PA1316K
Governor no. : 0 421 815 544

Cust. part No. : 3928600

Customer-spec. information
Customer : CDC
Motor : 4BTA-A
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 143.0

cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: + 4.0
<hr/>	
Spreed cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance cm ³ /1000S.	: 12.0
<hr/>	
Rated speed rpm	: 475
<hr/>	
Rack travel in mm	: 5.50
Tolerance mm	: + 0.10
Del. quantity cm ³ /1000 strokes	: 26.5
cm ³ /1000 strokes	: + 3.0
Check tolerance cm ³ /1000S.	: + 5.0
Spreed cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 475
guide sleeve travel mm	: 1.59
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 1313
guide sleeve travel mm	: 9.12
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 985
guide sleeve travel mm	: 6.26
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 680
guide sleeve travel mm	: 3.62
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1660
guide sleeve travel mm	: 13.50
Tolerance mm	: + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 143.0
cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 4.0
Spreed cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 117.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 10.50
Rated speed rpm	: 1315
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 6.00
Rated speed rpm	: 1390
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1500

LOW IDLE

control lever position degree	: 73.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm	: 475
rack travel mm	: 5.50
Tolerance mm	: + 0.10
<hr/>	
Rated speed rpm	: 400
CRT mm min.	: > 6.80
Rated speed rpm	: 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 10.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.45
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 800
rack travel mm : 10.50
Tolerance mm : \pm 0.20

Pressure hPa : 680
rack travel mm : 9.85
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 375

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 385

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 142.0
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 111.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 176.0
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 26.5
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.06.95
Test oil : ISO 4113
Combination No. : 0 400 866 179
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV550...1100A0C2238
Governor no. : 0 420 233 296

Cust. part No. : 3923479

Customer-spec. information
Customer : CDC
Motor : 6CTA-830
Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 124.0

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 124.0
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED

N24

rack travel mm : 11.70
Rated speed rpm : 1170
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1240

LOW IDLE

control lever
position degree : 79.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 5.20

Testing:

Rated speed rpm : 550
rack travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 900
rack travel mm : 12.75
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1100

Pressure hPa : 465
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 340
rack travel mm : 11.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 83.5
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 2.5

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1170
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 145.0
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.05.95
Test oil : ISO 4113

Combination No. : 0 400 866 183

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006

Governor
Governor design. : RSV400...1100ADC2190
 : -61R
Governor no. : 0 420 233 300

Cust. part No. : 3921100

Customer-spec. information

Customer : CDC
Motor : 6CT 8.3
Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.75
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	89.0
cm ³ /1000 strokes	: ±	1.0
Check tolerance cm ³ /1000S.	: ±	3.0
Spreed cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	6.5
Rack travel in mm	:	5.00
Tolerance mm	: ±	0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	:	800
Rack travel in mm	:	0.50
Tolerance mm	: ±	0.20
governor spring pre-tension click setting x	:	4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1100
Aneroid pressure hPa	:	-
Del. quantity cm ³ /1000 strokes	:	89.0
cm ³ /1000 strokes	: ±	1.0
Check tolerance cm ³ /1000S.	: ±	3.0
Spreed cm ³ /1000 strokes	:	4.0
Check tolerance cm ³ /1000S.	:	6.5

CONTROL LEVER

control lever position degree	:	110.0
tolerance degree	: ±	4.0

RATED SPEED

rack travel mm	:	8.70
Rated speed rpm	:	1150
Tolerance 1/min	: ±	5
rack travel mm	:	4.00
Rated speed rpm	:	1235
Tolerance 1/min	: ±	5
rack travel mm	:	0.85
Tolerance mm	: ±	0.55
Rated speed rpm	:	1300
rack travel mm	:	4.00
Rated speed rpm	:	1240

LOW IDLE

control lever position degree	:	89.0
tolerance degree	: ±	4.0

Setting point w/out bumper spring

Rated speed rpm	:	400
rack travel mm	:	4.50

Testing:

Rated speed rpm	:	400
rack travel mm	:	5.00
Tolerance mm	: ±	0.10

Rated speed rpm	:	100
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CRT mm min.	:	> 19.00
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TORQUE CONTROL

Rated speed rpm	:	1100
rack travel mm	:	9.75
Tolerance mm	: ±	0.05

Rated speed rpm	:	750
rack travel mm	:	10.80
Tolerance mm	: ±	0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 98.5
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 8.70
Rated speed rpm : 1150
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 160.0
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

End of test specification sheet